

Christine Grima-Farrell

What Matters in a Research to Practice Cycle?

Teachers as Researchers

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Christine Grima-Farrell
University of New South Wales
Kensington, Australia

Australian Catholic University
Strathfield, Australia

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Inspirational defies the comprehensible in both scientific and human endeavours Stephen Hawking (The theory of everything, Film 2014)

The work of educational practitioners and researchers that strive to enhance student social, emotional and academic outcomes is truly inspirational.

What matters most in the research to practice cycle? Strives to inspire, encourage and link scientific and human endeavours to reframe research to practise knowledge and inclusive education philosophy to promote the sustained use of research to enhance meaningful education for all students.

In these welcome days of implementation science, research has to be real. There has to be a direct and rich connection between what is known and what translates from such data.

In this volume, Grima-Farrell delivers exactly that balance: a triumph of deep analysis on a complex and synergistic area, namely, inclusive classrooms and schools. This is a must-read if you want to know what is happening in this challenging and compelling field and where we need to head if research is to inform daily practice.

Professor, School of Education
The University of Newcastle

Michael Arthur-Kelly, PhD

Much is written about the challenges education faces in bringing its research to professional practice at scale. Little of that work reflects a rigorous empirical investigation of the research to practice process. This book stands alone as a research-based account of the challenge based upon the study of multiple applied research cases each targeted at implementing an evidence-based innovation in an inclusive education setting. The essence of the book is the story of these case studies and the way the findings derived from them are employed to produce a practical model for bringing evidence-based practice to scale in inclusive education. This is truly a unique offering that 'walks the talk' of research to practice and should be read by anyone interested in better professional practice in inclusive and general education.

Associate Professor, School of Teacher Education
Charles Sturt University

Alan Bain

Foreword

Bridging the Research-to-Practice Gap

How does education theory find its way into practice? What hinders this movement? What might help it? How might academics and teachers, working together, not just put relevant educational theory to practical, everyday use and support ongoing professional learning but also generate new theory in ways that bridge gaps between theory and practice?

In the pages that follow, Christine Grima-Farrell explores these questions – and comes up with some answers – through a careful, detailed and accessible account of her own school-based research studies, focussing in the process, on a specific and all-too-often underused field in social research: that of educational inclusion. As readers will quickly discover, her choice of the words ‘bridge’ and ‘gap’ are not insignificant, suggesting both a willingness and a desire – as well as a not overly complicated plan and process (a bridge-building project, we might say, making use of existing skills) – for teachers and academics to come together within what is effectively a newly conceived form of *praxis*. To quote the author herself: *Teaching and research fundamentally depend on the involvement of one another for maximum benefit. The merger of the active ingredients identified through research and practice move us beyond simply imparting knowledge, to inspiring growth and transformation through the enhancement of deep multifaceted understanding.*

In the new working relationship proposed and celebrated in *What matters in a research-to-practice cycle?*, teachers stop being understood or understanding themselves as the sole exponents of practice, while academics stop being understood or understanding themselves as the sole exponents of research and theory. This is a relationship that can best be described and constructed as a *partnership of equals*, in which both the theoretical and the practical elements of teacher education are fused together and in which, importantly, the processes and practices of that fusion are also shared between academics and teachers working together. Physically, academics working within the field of education studies may still be largely based in academia; but they are likely to find themselves spending more time in schools – experiencing

the experiences of teachers and students, so to speak. School teachers, meanwhile, will continue to spend most of their working lives in classrooms but may also find themselves occupying working spaces more frequently inhabited by their academic colleagues. It is an approach which recognises, celebrates, develops and draws upon teachers' professionalism – and it does so in ways that go far beyond the demands of current widespread discourses of 'standards' and 'teacher competence' which have become so dominant in so many initial and continuing education programmes around the globe.

Grima-Farrell argues for an approach which invites, listens to and disseminates teachers' experiences, concerns and expertise. These key components are too often and too easily overlooked by politicians and policymakers. The kinds of partnership Grima-Farrell promotes might not happen overnight, as she wisely acknowledges, and may, at least in the first instance, rely on the efforts and determination of committed individuals. However, the potential gains in relation to professional learning, improved practice and increased positive teaching and learning experiences, will be amply and enduringly repaid.

Speeding Up the 'Slow Conversion': Re-imagining Roles

Assuming we agree with Grima-Farrell that research-based theory is of benefit to practising teachers (a view not necessarily shared, alas, by all *policy makers*), how *do* we go about making it happen and about making it happen more quickly and effectively – to use Grima-Farrell's own words, to speed up the 'slow conversion of research into practice'?

Importantly, it is the *process* as much as the practice of bridging the research-to-practice (RTP) gap that Grima-Farrell focuses on, as she seeks not just to identify problems and possibilities but to offer examples of such bridging from her own school-based research. In doing so, she highlights for us a major *cultural* stumbling block, concerning the ways in which education academics and classroom practitioners themselves may have come to perceive one another and their respective roles in the research-to-practice process. A particular concern, and a major cause of the 'RTP gap', whether we work in the academy or in the school (or for some of us, in both), is a continuing misalignment within education not simply between theory and practice but between those working in universities – often perceived by teachers as the sole undertakers of research and producers of theory – and those working directly with students in school classrooms. As is clear from the pages that follow, many teachers continue to perceive education academics as experiencing life away from the 'real world' of the school and classroom, appearing to present their findings in esoteric language and hard-to-find academic journals – perhaps tending to pursue their own research interests and 'taking among themselves', with little genuine concern for their research's usefulness and implementation, rather than listening to or exploring the concerns of teachers. For their own part, many academics who would dearly love their theory and research findings to find their way into classroom

practice, and who may indeed have been motivated to conduct research in the first place with this end in mind, may feel themselves frustrated in their attempts by the perceived response of a professional workforce that (for understandable reasons in these hard-pressed times) demands instant fixes to pedagogic problems, by official central and local government policy that might appear to hold education theory in disdain and by professional development courses whose focus on the practicalities of managing learning serves itself to perpetuate the RTP gap.

A particular problem here relates to the different *work experiences* of academics and teachers. Not only are academics perceived (not unreasonably) as having more time and resources to conduct research; teachers can justifiably complain that they do not have sufficient time and resources to read and engage with research and theory, to – so to speak – convert it themselves into classroom practice, and are not interested in receiving theory and research in its initial form, but rather converted already into advice for classroom practice. Drawing on her own extensive experience as a classroom teacher, Grima-Farrell rather neatly sums this up as follows:

In the schools I taught at, my colleagues and I were always rather cautious around the programs we implemented. After all, our curriculum was over-crowded and we were time poor. We struggled to be confident that we would get the right program that would benefit all the students in our class. We all struggled with this complexity.

Such pressures and uncertainties, she continues, not only made it difficult for herself and her colleagues, to convert research findings into practice, but had the added effect of rendering teachers unconfident about doing the job for themselves – one consequence of which was a lack of critical engagement with research, so that all research had the potential to be taken at the same face value:

Naively I, like many of my colleagues, didn't fully investigate the soundness of the research (although we thought we had) and we didn't fully comprehend how to critique research or why we needed to. We weren't researchers but the women and men who had 30 students in our classes all day and every day. We assumed the researchers were better armed to critically analyse research and then we would engage with the strong empirical programs that would be available to us as school based educators.

Importantly, Grima-Farrell concludes: *That myth was soon dispelled once my comprehension of research methodology began to strengthen.*

Understanding Research Methodology

The importance of knowing about research methodology – i.e. knowledge of the foundation and practices upon which research findings and understandings are developed and publicised – is one key idea in Grima-Farrell's book. This is not a matter of academics preaching to practitioners or telling them what to think and do, but rather of academics and school-based educators working together using a common language – **on an equal footing**. The process begins and ends with teachers and their classrooms and students, in what Grima-Farrell aptly refers to as an 'RTP

cycle’ – one that encourages discussion not just within individual schools and school departments, but, crucially, across and between schools, so that findings are pooled and simultaneously peer assessed as part of an ever-evolving research-to-practice process. Such a relationship is exemplified in Grima-Farrell’s own work, through a forensic, step-by-step account of a specific research methodology adopted while acting as an advisory academic on six school-based teacher-led projects. Her clear and detailed account of this work acts itself to provide teachers and potential school-university partnerships not only with critical knowledge with which to read and engage with the research of others but with a blueprint of how they might conduct classroom- and practice-based research themselves. This includes not only the sharing of research techniques, but also advice on analysis, dissemination and ethical issues.

Dissemination as Key

Dissemination and ongoing reflexivity – including built-in opportunities for discussion and sharing across simultaneous case studies – are key aspects of Grima-Farrell’s suggested research methodology, which she inscribes within three interrelated but clearly distinct phases: first the *exploration phase*, which focuses on ‘identifying the influential school and program factors within the specific experiences of participating teachers as they implement a research-based initiative in their own school’; second the *explanation phase*, which draws on the findings of the first phase in order to ‘examine more deeply how the research to practice (RTP) influences impact upon the conduct and status of the individual cases’; and third the *expansion phase* which makes use of focus groups drawn from the individual studies’ participants, to (in the example analysed in the book) ‘identify themes and relationships derived from the consistencies, differences and the recognition of additional factors that resulted in six different RTP experiences as identified by teachers who implemented research in their diverse school settings’.

The spiralling, evolving nature of this approach, in which research and theory are repeatedly and rigorously tested through dialogue with practice and experiences of implementation, is one that enables and indeed insists upon practical experience not simply being informed by the ongoing research project but itself informing the findings and ongoing development and dissemination of the project itself. Such a methodology takes full account of the nature of *contingency* in public education settings, and of the fact that there may be many different ways in which research and theory may or may not be helpful within the specific school or classroom or pedagogy in which it is tested. As we all know, a major problem for many schools and teachers when it comes to engagement with educational research is that it is very often presented as if it is easily, readily and universally applicable in any situation at any time. As Grima-Farrell says in relation to the specific research project on which she focuses in this book, the central aim of collaborative school-based work of this kind is to enhance our understandings of ‘the multiple and complex dimensions of...

education research and practice cultures’ – and a key aspect of her approach involves scaling and tailoring research, to take account of individual circumstances so as to produce an appropriate and workable ‘fit’.

Developing School-University Research Partnerships

Although *What matters in a research-to-practice cycle?* may be of particular interest to practitioners working in the field of inclusive education, it is by no means exclusively aimed at such a constituency, being immediately relevant and helpful to any school teacher wishing to know more about the nature and processes of educational research and to any teacher, school, higher education institution or individual academic interested in developing needs-based collaborative research studies and to the generation and testing out of new theory. Written in clear, down-to-earth English and exhibiting a wealth of accumulated experience, understanding and sympathy that enables her to engage authentically with the needs and interests of workers in both higher and compulsory education. Grima-Farrell has produced a blueprint for future reflexive, school-HEI research partnerships that has far-reaching implications both for the production of meaningful, useable educational research and theory and also in relation to reconfiguring working relationships more broadly between schools and academia. While school teacher attendance at HEI-run Masters programmes offers one site and avenue for pursuing such an agenda, I would suggest that initial teacher education programmes offer another. At a time when many education authorities and HEI providers of initial teacher education in Australia and elsewhere are addressing with some urgency an ongoing difficulty in constructively combining the practical with the more research- and theory-driven elements of such programmes, leading to re-evaluations of the respective roles of schools and HEIs in teacher education and training, Grima-Farrell’s book makes itself immediately available as an accessible and invaluable resource in moving such discussions, actions and policies forward.

Institute of Education
University of London
London, UK

Alex Moore

Preface

The focus of this book is on *how* successful and validated teaching approaches can be implemented and *sustained* to support teachers in addressing the diverse needs of individual students in our school systems.

It is embedded in a philosophy that aims to connect students and teachers through evidence-based approaches that effectively address their strengths and needs. It seeks to maximise students' potential to flourish as individuals and classroom members while acknowledging that we all experience life and learning differently. Everyone has a past and has been exposed to different teaching and learning strategies, interests, languages, cultures, strengths and challenges. It advocates for inclusion through the involvement and collaboration of stakeholders including educators, researchers, community leaders, students, parents and policymakers. It endeavours to encourage discussions on how to advance the use of research to enhance inclusive practice *and* how good practice within authentic and changing twenty-first century classrooms can inform research.

Sustaining the complex balance between research and practice in ways that integrate the knowledge and strengths of multiple perspectives can advance student engagement and achievement and their sense of belonging within diverse learning communities. Advances in research on implementing evidence-based practices for educating students with and without disabilities have generated a strong knowledge base that can underpin efforts to make classrooms and schools more inclusive. Yet despite these significant advances, there remains a significant gap between what has been proven to work in classrooms and the extent to which it has been applied and sustained to address the diverse needs of students.

This complex research-to-practice (RTP) gap is a common concern across a range of disciplines and has been discussed at length by educational researchers and classroom teachers alike. National and global education directives continue to advocate for the sustained use of research-based practices to enhance student outcomes. But still our inability to close the RTP gap has an adverse effect on the progress of inclusion in schools and our ability to effectively and efficiently respond to the needs of all students.

The book is divided into three sections which specifically focus on the sustained use of research to enhance inclusive education. The first section builds and *states the case* by identifying the concerns and complexities associated with the research-to-practice gap in inclusive education. The second section presents a detailed perspective of both research and practice paradigms. It *makes the case* by investigating the practices of six experienced educators and their efforts to empower student growth through the use and sustainment of educational practices that are embedded in research. Essential consideration of case study design is also presented in Section 2. The third and final section considers key findings from the two previous sections to propose a way forward in *building a solution* to reducing the research-to-practice gap. A framework in the form of a comprehensive and cyclic research-to-practice model that highlights the importance of integrating the key components beneficial to reducing the RTP gap is presented in Part 3.

The primary aim of this cyclic research-to-practice model is to enhance the sustained use of validated research in school-based applications to respond to the diverse needs of all students. This research-to-practice model is also proposed as a planning tool for education systems, policy developers, school leadership and tertiary teacher educators to raise awareness of the essential connections between key RTP factors and the people implementing the initiatives, the projects themselves and the preparation required if valuable and validated research initiatives are to be successfully sustained in practice.

As national and international policies mandate that all educators be responsive to the inclusion of all students through the use of research-based practices, this book may be of particular interest to those who strive to address the needs of a diverse student population. This includes applied academics and researchers committed to research to practice, researchers moving towards practice-based studies, teachers, school and system leadership staff, policy developers and evaluators, educational psychologists and professional support agency staff.

In brief the topics covered include the need for a consistent and comprehensive approach to inclusive education that is informed by multiple perspectives. The goal is to ensure that teachers and students can successfully access validated instructional approaches that address their educational needs. This book's comprehensive approach enables readers to develop a deep understanding of the issues, successes, failures and concerns associated with the benefits and challenges of sustaining research innovations in practice. An emphasis is placed on giving traction to research endeavours and empowering educational professionals with a practical pathway to use validated research practices to enhance effective and timely instruction within the global context of inclusion. Methodological decisions and procedures are presented in detail to provide an example for future teacher researchers interested in school-based case study research.

I would like to thank the readers for their interest in this book and the dedicated teachers and researchers who became involved in this work to make a difference. Responding to this well-articulated research-to-practice gap represents the felt obligation of many. It has led to a moral and ethical response to working towards a strengths-based approach that proposes a possible pathway that links research and

practice to enhance student engagement and success. I wish you success in the progression of your research, research-based teaching and learning endeavours and in the sustained development of inclusive school communities.

University of New South Wales
Kensington, Australia

Dr Christine Grima-Farrell

Australian Catholic University
Strathfield, Australia
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Contents

Part I The Gap Between Research and School Practice in Inclusive Education: Concerns and Complexities	
1	Research to Practice and Inclusion 3
1.1	Introduction to Inclusive Education in the Field of Research and Practice 5
1.1.1	Inclusion..... 6
1.1.2	Challenges..... 7
1.1.3	Global Directives 8
1.2	Aims and Significance of This Work..... 8
1.3	Research Questions 10
1.3.1	Central Overarching Research Question..... 10
1.3.2	Exploration Phase Questions 10
1.3.3	Explanation Phase Questions 11
1.3.4	Expansion Phase Questions 11
	References..... 12
2	The RTP Literature: Mind the Gap! 15
2.1	Introducing the Need to Bridge the Research-to-Practice Gap 17
2.2	Stating the Research to Practice Case in Inclusive Education: A Perspective Grounded in Four Decades of Literature..... 22
2.3	Research-to-Practice..... 23
2.3.1	Research-to-Practice Literature Based Knowledge 26
2.3.2	Synthesising Key COMMENTARY Claims and Assertions in the Research-to-Practice Literature 26
2.3.3	Related RTP INTERVENTION Research That Substantiates Commentary..... 29
2.4	Professional Development and RTP 33
2.5	Teacher Education and RTP 38
2.6	Comprehensive School Reform and RTP 42

- 2.7 Concerns Based Adoption Model (CBAM) and RTP..... 50
 - 2.7.1 Stages of Concern 50
 - 2.7.2 Levels of Use 51
 - 2.7.3 Innovation Components 51
- 2.8 Summary of the RTP Literature 55
- References..... 59
- 3 The Collective Case Study Design: Comparing Six Research to Practice Case Studies..... 67**
 - 3.1 Introduction 69
 - 3.2 The Context and Purpose of This RTP Work..... 70
 - 3.3 Central Research Question 71
 - 3.3.1 Exploration Phase Questions 72
 - 3.3.2 Explanation Phase Questions 72
 - 3.3.3 Expansion Phase Questions 72
 - 3.4 Case Study Research Design 72
 - 3.4.1 Are There Different Types of Case Study Designs? 73
 - 3.5 Understanding Causal Comparative Case Study Research Design and Its Components..... 75
 - 3.6 Describing the Unique RTP Operational Pathway Approach..... 76
 - 3.6.1 Questions..... 76
 - 3.6.2 Propositions..... 76
 - 3.6.3 Unit(s) of Analysis 77
 - 3.6.4 Linking Data to Propositions and Criteria for Interpreting Findings..... 77
 - 3.7 Replication Within the Multiple Case Study Design: Consistency Across Cases 79
 - 3.8 Blending Differing Research Perspectives Is Complex..... 81
 - 3.8.1 Breaking Down the Terminology 81
 - 3.9 Analysis of the Data 91
 - 3.9.1 Theoretical Propositions 91
 - 3.9.2 Procedures Overview 92
 - References..... 103

Part II Research and Practice Paradigms

- 4 Meet the Teachers: Introducing Six Experienced Teachers and Their Selected Research Based Projects..... 111**
 - 4.1 The Teachers, Their Schools, the Masters Course and the Research Based Projects 112
 - 4.1.1 Background and Context: How and Why Did This Work Commence?..... 112
 - 4.1.2 Introduction to the Teacher Participants and Their Schools..... 115
 - 4.1.3 Lets Meet the Teachers Individually 116

4.2	Chris- Case 1 (Participant Researcher).....	117
4.2.1	Year 2 Curriculum-Based Measurement- DIBELS- Oral Reading Fluency	117
4.2.2	The Research Base Supporting the Intervention.....	118
4.2.3	Reported Program Implementation Integrity	119
4.2.4	Outcomes of My Project	120
4.2.5	Scaling Up of My Project	120
4.3	Mary- Case 2	120
4.3.1	Kindergarten: Curriculum Based Measurement- DIBELS- Initial Sound Fluency and Letter Naming Fluency	120
4.3.2	The Research Base Supporting the Intervention.....	121
4.3.3	Mary’s Reported Project Implementation Integrity	122
4.3.4	Outcomes of Mary’s Project	123
4.3.5	Scaling Up of Mary’s Project.....	124
4.4	Case 3- Diane	124
4.4.1	Years 7–10: Curriculum- Based Measurement- Peer Assisted Learning.....	124
4.4.2	The Research Base Supporting the Intervention.....	124
4.4.3	Diane’s Reported Project Implementation Integrity	125
4.4.4	Outcomes of Diane’s Project	126
4.4.5	Scaling Up of Diane’s Project.....	126
4.5	Case 4- Wilma	127
4.5.1	Year 6: Curriculum-Based Measurement- DIBELS- Oral Reading Fluency	127
4.5.2	The Research Base Supporting the Intervention.....	127
4.5.3	Wilma’s Program Implementation Integrity	128
4.5.4	Outcomes of Wilma’s Project	128
4.5.5	Scaling Up of Wilma’s Project.....	128
4.6	Case 5- Sam	129
4.6.1	Year 1: Explicit Teaching as a Practice for Quality Teaching	129
4.6.2	The Research Base Supporting the Intervention.....	129
4.6.3	Sam’s Reported Program Implementation Integrity	130
4.6.4	Outcomes of Sam’s Project.....	131
4.6.5	Scaling of Sam’s Project	132
4.7	Case 6- Meg.....	132
4.7.1	Year 3: Peer Assisted Learning- Spelling.....	132
4.7.2	The Research Base Supporting the Intervention.....	132
4.7.3	Meg’s Reported Program Implementation Integrity	133
4.7.4	Outcomes of Meg’s Project.....	133
4.7.5	Scaling of Meg’s Project.....	134
4.8	Summary of the Reported Implementation Integrity.....	134
4.9	Summary of the Status of the Projects	135
	References.....	136

5 The Exploration Phase 139

5.1 The Development of the Literature Based Framework
at the Core of the RTP Investigation..... 142

5.1.1 Factors Identified in Literature That Contributed
to Sustaining Research Based Projects 143

5.2 Researchers Perspectives 144

5.2.1 List of 16 Succinct RTP Factors 145

5.3 Teacher Perspectives..... 147

5.3.1 Factors Identified by Participants Prior to the
Introduction of RTP Literature..... 147

5.3.2 Comparison of the Factors Identified by Teacher
Participants with the Factors Asserted in the RTP
Literature..... 151

5.3.3 Teacher Education..... 154

5.3.4 RTP Factors Identified by Participants, NOT
Identified in the Literature 156

5.3.5 RTP Factor Presented in the Literature NOT Identified
by Participants..... 157

5.3.6 Teacher Insights on the Integrity of Project
Implementation 158

5.3.7 Comparison of the RTP Factors Identified by
Teachers and Their Reported Integrity of Project
Implementation 158

5.3.8 Summary of the Exploration Phase..... 159

6 The Explanation Phase 161

6.1 Delving Deeper to Enhance Our Knowledge on Ways
to Sustain the Use of Educational Practices that Are
Embedded in Research 162

6.1.1 Data Collection Tools Utilised in This
Explanation Phase 163

6.1.2 Factors that Are Vital to Sustaining
Research-Based Projects in Practice
as Explained by Experienced Teachers..... 165

6.1.3 Collective Insights Explaining the Factors
that Are Critical to the Sustained Use of Evidence
Based Projects in Classrooms:
What Matters Most to Teachers? 169

6.1.4 Review of the Significant RTP Knowledge Collected
Through the Explanation and Exploration Phases 190

6.1.5 RTP Factors and Connections 191

6.1.6 Six Key RTP Themes Consistently Prioritised
and Linked by Experienced Teachers: Digging
Deeper into Comprehending What Makes Research
Stick in Practice 192

References..... 196

7 The Expansion Phase..... 197

7.1 Overview of the Structure of the Focus Group..... 199

7.2 Consistency in Connections of Key RTP Factors Identified Through the Group Discussion 199

7.3 Shared Responsibility, Collaboration and Feedback 200

7.3.1 Focus Group Questions..... 200

7.3.2 Responses..... 200

7.4 Leadership 205

7.4.1 Focus Group Questions..... 205

7.4.2 Responses..... 205

7.5 Project Scalability with a Complete Approach and Time..... 207

7.5.1 Focus Group Question 207

7.5.2 Responses..... 207

7.6 Master’s Course/Teacher Education 210

7.6.1 Focus Group Question 210

7.6.2 Responses..... 211

7.7 Consistencies Identified by Teacher Participants 213

7.8 Inconsistencies Identified by Teacher Participants 214

7.9 Summary of the Significant RTP Knowledge Collected During the Expansion Phase..... 214

7.10 Summary of Part Two 215

7.10.1 Review of the RTP Knowledge Collected Through the Three Phases of this Study 215

7.10.2 Relationship of Factors that Contributed to the Extinction of Two Individual RTP Cases..... 223

Part III Moving Forward in Reducing the Research to Practice Gap

8 Teacher Education: Engaging Connections Between People, Projects and Preparation..... 229

8.1 Critical Connections Among RTP Factors..... 229

8.2 Core Areas to Enhancing the Sustained Implementation of Research Based Practices in Classrooms and Schools..... 230

8.2.1 Engaging Schools and Universities in Effectively Preparing Teachers..... 230

8.2.2 Engaging People and Enabling Them to Work to Their Capacity..... 232

8.2.3 Engaging Effective Projects Can Address the Diverse Needs of Multiple Stakeholders..... 234

8.3 Connections and Progression 235

9 The RTP Model: An Interactive Research to Practice Framework 237

9.1 Brief Overview of the Three Phases of this Study 238

9.2 Overview of the Key Conclusions and Insights Gained Through Each Phase of this Research 239

 9.2.1 Exploration Phase Key Conclusions 239

 9.2.2 Explanation Phase Key Conclusions 240

 9.2.3 Expansion Phase Key Conclusions 243

9.3 Introducing an Interactive Research to Practice Model 245

9.4 Framework for Implementing and Sustaining Research Based Practices 246

 9.4.1 Contextualisation – Examples of the Application of the RTP Model 248

References 250

10 Aligning Our Focus with Strengths and Solutions 251

10.1 Recommendations for Future Research 255

10.2 Conclusion 256

10.3 Moving Forward 257

References 258

Appendices 259

Appendix 1: Research-to-Practice Survey (Part 1) 259

 Personal Details 259

 Implementation Setting Details 260

 Project Details 260

 Project Details Continued 262

 Research-to-Practice Survey (Part 2) 263

 Investigation Categories 263

 Key Collaboration Components 265

 Key Support Components 266

 Key Responsiveness of Research Components 268

 Key Teacher Education Components 270

Appendix 2: Open Ended Interview Questions 279

 Open Ended Interview Questions 279

Appendix 3: Semi Structured Interview 279

 Semi Structured Interview 279

 Collaboration 279

 Support 280

 Leadership 280

 Teacher Education 281

 Practical Implementation and Responsiveness of Research 281

 Other 282

List of Illustrations

Fig. 3.1	RTP study operational pathway using elements of Yin's (1994) key features of case study design and Fraenkel and Wallen's (2006) description of causal comparative design	77
Fig. 3.2	Replication logic as derived from Yin et al. (1983).....	80
Fig. 3.3	Convergence of multiple data sources of evidence.....	84
Fig. 1	Stages of reporting.....	108
Fig. 6.1	Evolution of RTP factor knowledge	196
Fig. 7.1	Meg.....	220
Fig. 7.2	Chris	221
Fig. 7.3	Mary	221
Fig. 7.4	Wilma	222
Fig. 7.5	Diane.....	222
Fig. 7.6	Sam.....	223
Fig. 9.1	Research to practice model: a framework for implementing and sustaining research based practices (RTP Model)	247

List of Tables

Table 2.1	Consistency and development of RTP literature based within and across identified areas.....	18
Table 3.1	Yin’s (1993, p.5) six different types of case studies.....	74
Table 3.2	Overview linking Yin’s (1994) components of research design including propositions, unit(s) of analysis and logic linking the data to the propositions	78
Table 3.3	Case study validity tactics	83
Table 3.4	Data collection tools, advantages & limitations.....	89
Table 3.5	Multiple causal comparative case study design research questions and overview	93
Table 3.6	Data collection sequences and details	95
Table 3.7	Consistency and development of RTP literature based themes and related factors	96
Table 4.1	Research participant details.....	113
Table 4.2	Summary of the reported implementation integrity provided by research participants.....	119
Table 4.3	Project status across a 4 year period	135
Table 5.1	Research-to-practice key themes and related factors	140
Table 6.1	Summary of the frequency of responses to RTP survey by themes	164
Table 7.1	Key emphatic themes presented in each case during the three phases of this study	216

Abbreviations

CBA	Curriculum-based assessment
CBAM	Curriculum-based adoption model
CBM	Curriculum-based measurement
CSR	Curriculum school reform
DIBELS	Dynamic Indicators of Basic Early Literacy Skills
DORF	DIBELS Oral Reading Fluency
ISF	Initial Sound Fluency
LNF	Letter Naming Fluency
NAPLAN	National Assessment Program – Literacy and Numeracy
PALS	Peer-assisted learning strategies
PD	Personal development
PSF	Phoneme segmentation fluency
RBP	Research-based programs
RTP	Research to practice
TE	Teacher education

Part I
**The Gap Between Research and School
Practice in Inclusive Education: Concerns
and Complexities**

Stating the case

Chapter 1

Research to Practice and Inclusion

The worst form of inequality is to try to make unequal things equal (Aristotle)

Abstract Advances in research on implementing evidence-based practices for educating students with and without disabilities has generated a strong knowledge base that underpins efforts to make classrooms and schools more inclusive of all students. Despite these advances, there remains a significant gap between accumulated research-based knowledge and how it is applied in the classroom to meet the diverse needs of students. This Research-To-Practice (RTP) gap, adversely effects the progress of inclusion in schools and the ability of teachers to effectively and efficiently respond to the needs of all students. This opening chapter introduces the RTP gap from both a researcher and practitioner perspective.

This chapter:

- presents the national and global goals of inclusion.
- articulates the implications of these goals from both a practitioner and researcher perspective.
- outlines the limitations and concerns of the Research-To-Practice (RTP) gap and how this gap adversely affects practitioners' efforts to make classrooms more inclusive and responsive to the needs of all students.
- describes the complex realities that have emerged over the last 40 years that impact on the significant RTP gap between our accumulated knowledge about effective educational practices and the extent to which these practices are applied.
- introduces and clarifies the “cultural clash” between practitioners and researchers, with a specific focus on the competing demands from each perspective.

Vignette

My Motivation Was Driven by Both Need and Passion

As a teacher, much of my time was spent striving to engage students through successfully responding to their diverse personalities, strengths and needs. I love teaching and striving to enhance student gains. I was always searching for useful resources and ways to sharpen my skills and knowledge to address what felt like an increasingly diverse range of students in my classrooms.

Working in and responding to changing educational landscapes and educational accountabilities presented many opportunities AND challenges. Changing school system accountabilities and expectations, state and national policies and frameworks and increasing media transparency has a significant impact on teachers and our craft. I'd feel overwhelmed and exhausted at times (like many teachers). I'd read about many validated research based practices and wanted to use them to help me work smarter rather than harder. I struggled to comprehend why these research based practices that claimed to address diverse student needs, were not sustained in real classrooms. After all isn't this why they were designed?

It was at this point that my needs and interests merged and my mission was to gain an increased knowledge on validated ways to enhance student engagement and learning outcomes. I wanted to improve my practice and was determined to implement the research based approaches I had read about to assist me in better responding to the needs of the *individual students* in my *whole class*.

This book reports on the research to practice and practice back to research journey that I experienced as I moved from teacher to educational researcher. I was a teacher in a large school system for over 20 years, then commenced a part time position as a teacher and researcher at an Australian University whilst still working in schools. Working as a teacher across both the school and university sectors simultaneously enabled me to interact with committed colleagues in both sectors who were driven by different expectations, benefits and demands. Both sectors were motivated by similar education drivers, ie to address students educational needs, yet it became very evident that the *two sectors had rather different competing demands*. Some differences included the strong research publication drivers that propelled educators/researchers at the university in contrast to the intense daily practice realities that drove educators in schools.

Anxieties caused by the usual suspects such as the lack of funds, resources, time and crowded curriculum continue to flow across both sectors that are full of many dedicated professionals who share the *same vision of enhancing student gains*. Within my roles as a classroom and special needs teacher, and an university tutor, marker and researcher in inclusive education, I was privileged to walk between the two seemingly similar yet quite different cultures to gain insight from many dedicated professional educators.

(continued)

These experiences and the work of previous researchers and educators confirmed that many challenges and opportunities exist in terms of research becoming practice from both the university and school perspectives. In essence this work builds on previous work to *promote a shared vision* (between school and university sectors) *that aligns special education with general education in a manner that strives to effectively impart quality research based education to all students*. It acknowledges and celebrates that teachers teach differently and students learn differently. It builds on the previous efforts of teachers and researchers to present a positive and optimistic message about the continuous and evolving cycle of research informing practice and practice informing research. This process is vast as there are no boundaries to human endeavours, however it does provide a way forward and promotes the sustained use of research based practices to enhance inclusion in our school systems.

1.1 Introduction to Inclusive Education in the Field of Research and Practice

Inclusive education has featured in research and practice fields since the 1980s with its meaning being negotiated over time. The term *inclusion* has been loosely used in education sectors and its success has been debated in both research and practice domains. Scholars such as Danforth and Naraian (2015) have stated that inclusive education is an extension of the field of special education. This isn't surprising given that the priority of teaching students with and without disabilities in the same classrooms transpired amongst those dedicated to the field of special education (Osgood 2008).

Researchers including Roger Slee (2011) have critiqued claims that the foundation of inclusion was “crafted and proposed by special educators who had an interest in reducing the segregation and isolation of students with disabilities” (Danforth and Naraian 2015, p. 70). Slee (2011) states that inclusive education classrooms are general education classrooms, predominantly comprised of students without disabilities. Suggesting that a special education grounding which was originally based in separate classrooms may not be the launching point for the inclusive education movement.

Although it is important to note the history around the inception of inclusive education, the aim of this book is not to address or debate these issues as previous publications have already done so. The intention of this book is to advance the knowledge on **how** implementing research based practices for educating students with and without disabilities can underpin efforts to make classrooms and schools more inclusive. As it is acknowledged that Inclusive Education has a range of interpretations both nationally and internationally and debates exist concerning its definition, a depiction of the interpretation of inclusion to ground this work is presented.

1.1.1 Inclusion

The term inclusion itself, is often broadly, and sometimes shallowly used, that in some contexts it has become almost empty and vacuous. For the purpose of this work notions of inclusive education are grounded in and aligned with those presented in the Salamanca Statement and Framework for Action (UNESCO 1994). The Statement re-affirms every individual's right to education. It also supports the 1993 United Nations Standard Rules on the Equalisation of Opportunities, which states that the education of children with disabilities should be an integral part of every education system (See Box 1.1).

To avoid misinterpretation, inclusion is specifically referred to as a commitment to educate students with disabilities in high quality, age appropriate, general education classrooms in their local communities (Grima-Farrell et al. 2011). It is based on the philosophy that schools should provide for the needs of all students in their communities regardless of their abilities or disabilities (The Australian Research Alliance for Children and Youth (ARACY) 2013; Foreman and Arthur-Kelly 2014; UNESCO 1994; European Agency 2012, 2014). Inclusive schools welcome, celebrate and cater for diversity ensuring that all students share the same rights and have the opportunity to reach their full potential (Villa and Thousand 2000). Over recent decades, efforts to make classrooms more responsive to the needs of diverse learners have produced educational guidelines and policies and ethical standards that frame efforts to create inclusive learning environments for all students. These efforts are aimed at providing the conditions whereby students could experience a sense of belonging, mastery and independence in inclusive classroom and school settings.

Box 1.1: Salamanca Statement (1994)

The Salamanca Statement (1994) was pivotal in creating a global vision to educate all students. Its strong focus on educating all students in regular classrooms has significant implications for educational practitioners, leaders and policy makers. Along with the potential gains, fears and challenges are often heightened through the increasing diversity of the needs of students in our classrooms. With this greater diversity and the new demands on education systems, the importance of validated, effective and responsive teaching strategies became highlighted. Teachers on the frontline want to get it right the first time to strengthen the successful inclusion of all the students. This has not changed over the last 20 years. Since Salamanca, significant works that have strongly asserted the need to implement research-based practices to positively impact on student learning outcomes have been published (particularly around 1997).

Given these well communicated shared needs and the RTP gap is still a reality, it is important to formally connect research-based practices and inclusion as a movement. Inclusion can be strengthened through the continued connection between global directives that encourage the implementation of research based initiatives and those that prioritise the educational rights of all students.

This aim is strengthened by a global movement focused on supporting students with disabilities in mainstream settings. Innes (2007) highlighted the strong international support for catering for the rights of people with disabilities, in stating that on the 30th March 2007, Australia and 80 other countries supported the Disability Convention at the United Nations (UN) in New York. The Convention is included in the reference to inclusion as it is about supporting people with disabilities and it received the greatest number of signatures of any international Convention on its first day. With such a well-supported drive for the inclusion of all students, empowering teachers who are at the forefront of making these inclusive visions a reality should be a priority.

1.1.2 Challenges

Fortunately with such strong global support for inclusion, attitudes, social norms and actions have positively progressed over time. Significant advances in research in the area have provided us with a rich knowledge base about what works in inclusive education. However, concerns that the general education sector remain poorly prepared to experience real success in actioning these current global education directives, which encourage the translation of research to practice (RTP) in inclusive education continue to exist. In fact educators have viewed the inclusive education movement through diverse lenses over the last four decades. Some have been pro inclusion others have been anti inclusion, and many along the spectrum in-between. Irrespective of their position on the spectrum of support for inclusion, claims of feeling ill equipped and unprepared to teach all children successfully in general education classrooms are common.

The significant advances in research on evidence-based practices for educating all students with a diverse range of abilities in schools and classrooms have not alleviated these concerns (Kena et al. 2014; The Australian Research Alliance for Children and Youth 2013). The reality is that the application of research-based programs in classrooms has been and continues to be slow. This has contributed to the inefficient use of strong research-based knowledge which can assist teachers in facilitating actual practice in classroom and school settings to make classrooms more inclusive (Grima-Farrell et al. 2011). Examples of these best practice pedagogies that promote inclusion of all students include cooperative learning, explicit teaching, peer tutoring, direct instruction, cognitive strategy training and interventions in literacy and numeracy, Curriculum Based Assessment (CBA) and Curriculum Based Measurement (CBM) (Ashman 2015; Florian and Black-Hawkins 2011; Golder et al. 2005; Good et al. 2001; The ERIC clearinghouse on disabilities and gifted education 2003).

These approaches have been shown to improve student achievement and are beneficial for differentiating the content, process and product of classroom instruction to meet the goals of inclusive education. This increased knowledge on inclusion has the capacity to assist stakeholders in making curriculum, materials, school and classroom environments more responsive to students from different backgrounds

with different learning abilities. Applying this knowledge in classrooms should significantly reduce the segregation of students based on performance levels or perceived abilities (Fuchs and Fuchs 1998; Lee et al. 2014; Loreman et al. 2011). Still, despite the advances in research, there remains a significant gap between our accumulated knowledge about effective inclusive educational practices and the extent to which they are applied in the classroom (Carnine 1997; Grima-Farrell 2014, 2015; Grima-Farrell et al. 2011; Vaughn et al. 2000). Even when instructional practices specifically designed for heterogeneous classrooms have been implemented with positive outcomes, there is no guarantee that they will be sustained and often they are not.

1.1.3 Global Directives

Since the Salamanca Statement (UNESCO 1994) calls to support and empower teachers with the skills and knowledge of how to use research-based practices to enhance inclusive classrooms continue to feature in national and global directives such as the Disability Standards (2005), No Child Left Behind Act (2001), Individuals with Disabilities Education Improvement Act (2004), National Declaration on Educational Goals for Young Australians (MCEETYA 2008), Promoting the Rights of Children with Disabilities (UNICEF 2007). Teachers and researchers have been driven by these global movements that urge them to make schools, and classrooms more responsive to the needs of all children (ARACY 2013; Foreman and Aurther-Kelly 2014; Grima-Farrell 2014, 2015; Grima-Farrell et al. 2011). This book strives to provide a framework to encourage the action of the principles of such directives. It is underpinned by both the global demand for every teacher to be responsive to inclusion (Lee et al. 2014; Grima-Farrell 2015), and the movement promoting research-based practices to bridge the research-to-practice gap to encourage access to the general curriculum for all students, including those with and without disabilities (ARACY 2013; Department of Education Training and Youth Affairs [DETYA] 2000; Disability Standards 2005; Foreman and Aurther-Kelly 2014; Innes 2007; Loreman et al. 2014; Singal 2008; Slee 2011).

1.2 Aims and Significance of This Work

The inability to ‘bridge the gap’ between research and practice is well documented around the globe (Carnine 1997; Foreman and Aurther-Kelly 2014; Grima-Farrell et al. 2011; Korthagen 2007; National Joint Committee on Learning Disabilities 1999; Olswang and Prelock 2015). This RTP gap has had an adverse effect on the progress of inclusion in schools and the ability of individual teachers to respond to the needs of all students. International efforts to improve the use of research to

address the diverse needs of classrooms and schools has generated extensive literature on inclusion, best practice, professional development and school reform (ARACY 2013; Bain 2007; Darling-Hammond et al. 2006; Deno 2003; Griffin and Warden 2006; Grima-Farrell and Coleman 2015). However the challenge of implementing, sustaining and scaling research efforts in classrooms and schools remains largely unresolved for many educators and researchers.

Although a great deal has been written about the RTP gap few studies have generated objective evidence about the specific factors that affect the implementation and sustainability of these practices in classroom and school applications (Billups 1997; Brouwer and Korthagen 2005; Darling-Hammond and Baratz-Snowden 2007; Grima-Farrell et al. 2011). In fact much of the literature in the area is based upon opinion and commentary derived from the reflections and insights of researchers about their work. This book builds on the valuable RTP insights gained and reviews a number of different research-based programs that are all designed to enhance inclusion. It specifically aims to investigate the factors that make effective programs ‘stick’ (*or not*) when implemented in diverse classroom contexts. It is hoped that new knowledge on **how** research can be **implemented and sustained in practice**, will support teachers in addressing the diverse needs of individual students in our school.

This work is embedded in a philosophy that aims to connect students and teachers, regardless of their strengths or challenges, and seeks to maximize their potential to flourish as individuals and classroom members. It acknowledges that we experience life and learning differently. Recognises that everyone has a past and has been exposed to different teaching and learning strategies, interests, languages, cultures, strengths and challenges. It advocates for inclusion through the involvement and cooperation of stakeholders including educators, researchers, community leaders, students, parents and policy makers. It endeavours to celebrate gains and encourage discussion on how to advance the use of research to enhance inclusive practice AND how good practice within authentic and changing twenty-first century classrooms can inform research.

Sustaining this complex balance between research and practice in ways that integrate the knowledge and strengths of multiple perspectives can advance student engagement, achievement and their sense of belonging within diverse learning communities. To further advance the collective knowledge in this area and build a deeper understanding of the factors that contribute to research becoming practice, a longitudinal research project that benefitted from the expertise and skills of researchers and school practitioners was conducted. It responds to global calls for additional research into enhancing the use of research based projects in schools to provide validated resources that can assist teachers in promoting student success in inclusive classrooms.

The knowledge presented through this book reflects the progressive pathway and results collected from an iterative ex post facto causal-comparative research study (Miles and Huberman 1994). This research was conducted to explore, explain and expand upon the understanding of the factors that contributed to the status and trajectories of validated research-based projects implemented in schools. The central

aim of the research was to determine what factors (*and the relationships between them*) contributed to the success or failure of research being sustained in inclusive education classrooms.

What matters in the RTP Cycle? Unpacks a complex investigation that consisted of three significant phases; an exploration, explanation and expansion phase. The initial exploration phase focused heavily on identifying the influential school and program factors within the specific experiences of the six teachers as they implemented an inclusive research-based initiative in their own school.

The second explanation phase drew on the findings of phase 1 to examine more deeply how the research to practice (RTP) influences impacted upon the conduct and status of the six individual cases. The final, expansion phase, employed a collective focus group approach to identify themes and relationships derived from the consistencies, differences and the recognition of additional factors that resulted from six different RTP experiences as identified by teachers who implemented research in their diverse school settings.

The three phases were guided by the following research questions which sought to contribute a greater comprehension of how the complex Research-To-Practice gap can be reduced to progress inclusion in schools and the ability of teachers to effectively and efficiently use research to respond to the needs of all students. This phased organisation of the research questions reflects the three stages of investigation presented in this book. The information collected at each phase was analyzed and used to inform the direction and progression of the next information collection phase.

1.3 Research Questions

1.3.1 Central Overarching Research Question

What are the factors *and the relationships between them* that contribute to the success or failure of research-based projects in inclusive education settings?

1.3.2 Exploration Phase Questions

What factors identified in the RTP literature contribute to sustaining research based projects (RBP) in inclusive education settings? How have these factors been identified? To what extent have these factors been validated through empirical research? What are the key contributors to the RTP gap identified teachers? How do they compare to existing literature?

1.3.3 Explanation Phase Questions

How do RTP factors identified in the school-based cases contribute to the status (success or failure) of RBP in inclusive education settings? In what ways do those factors exert an influence?

How do the relationship between factors exert an influence on the practical application and sustainment of research-based projects?

1.3.4 Expansion Phase Questions

What factors, other than those identified in the exploration and expansion phases, contribute to the status of RBP in inclusive education settings?

What were the differences and consistencies in the relationships between the RTP factors that contributed to the status of the projects that were identified by the research participants?

These questions were designed to elicit new knowledge and guide the staged RTP investigation for use with a range of validated research based approaches. Teachers could select from a range of validated research based approaches that were responsive to the needs of their students and school settings. The collective intention of the phased research questions was to contribute to a deeper understanding of the factors and the relationship between them that could enhance the use of Research-Based Practices (RBP) to address the needs of all students. The knowledge gathered as a result of the proposed research questions was foundational to the development of the RTP Model presented in the final section of this book. The cyclic RTP Model aims to inform teacher preparation programs and give capacity to National and Global Inclusive Education directives to sustain the use of validated research in classroom practice.

Key Points

This introductory chapter highlighted that:

- Continuing advances in research based education programs are evident as National and International educational policies and frameworks strive for equity and excellence. Yet the challenge of implementing and sustaining research based practices in classrooms and schools, to support diversity and enhance student learning outcomes, remains largely unresolved for many educators and researchers.
- Much has been written about this challenge of narrowing the gap between ‘theory’ or research and practice as it is problematic in education.
- The much has been articulated over the last 40 years in relation to the significant gap between our accumulated knowledge about effective research based educational practices and the extent to which those practices are utilized to assist student achievement. However this knowledge seems to have done little to ensure

research based programs are successfully implemented to address the needs of all students.

- The three phases (exploration, explanation and expansion phases) within this research design are introduced in relation to the research questions within each phase. They link a moral obligation to building inclusive cultures that use research based approaches to respond to the needs of individual children with the recommendations of empirical research.
- This work strives to move beyond a problem identification approach to a research strengths based approach that creates a possible pathway to narrowing the well articulated research to practice gap with inclusion and enhancing student gains at the core.

References

- Ashman, A. (2015). *Education for inclusion and diversity* (5th ed.). Melbourne: Pearson Australia.
- Australian Research Alliance for Children & Youth. (2013). *Inclusive education for students with disability: A review of the best evidence in relation to theory and practice*. Available at http://www.aracy.org.au/publications-resources/command/download_file/id/246/filename/Inclusive_education_for_students_with_disability_-_A_review_of_the_best_evidence_in_relation_to_theory_and_practice.pdf
- Bain, A. (2007). *The self-organizing school: Next generation comprehensive school reforms*. Lanham: Rowman & Littlefield Education.
- Billups, L. H. (1997). Response to bridging the research-to-practice gap. *Exceptional Children*, 63(4), 525–527.
- Brouwer, N., & Korthagen, F. (2005). Can teacher education make a difference? *American Educational Research Journal*, 42(1), 153–224. doi:10.3102/00028312042001153.
- Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children*, 63(4), 513.
- Commonwealth of Australia. (2005). *Disability standards for education, (2005)*. Canberra, ACT: Viewed 24/5/2009 http://www.deewr.gov.au/Schooling/Programs/Documents/Disability_Standards_for_Education_2005_pdf.pdf
- Danforth, S., & Naraian, S. (2015). This new field of inclusive education: Beginning a dialogue on conceptual foundations. *Intellectual and Developmental Disabilities*, 53(1), 70–85.
- Darling-Hammond, L., & Baratz-Snowden, J. (2007). A good teacher in every classroom: Preparing the highly qualified teachers our children deserve. *Educational Horizons*, 85(2), 111–132.
- Darling-Hammond, L., Dozer, C., Johnston, P., & Rogers, R. (2006). Teacher education. *Teachers College Record*, 108(8), 1688–1694.
- Deno, S. L. (2003). Developments in curriculum-based measurement. *Journal of Special Education*, 37(3), 184–192.
- Department of Education Training and Youth Affairs. (DETYA). (2000). *The impact of educational research: Research evaluation programme*. Canberra: Author.
- European Agency for Development in Special Needs Education. (2012). *Raising achievement for all learners – quality in inclusive education*. Odense, Denmark: Author. <http://www.european-agency.org/publications/ereports/ra4al-synthesisreport/RA4AL-synthesis-report.pdf>
- European Agency for Special Needs and Inclusive Education. (2014). *Five key messages for inclusive education: Putting theory into practice*. Odense: Author.
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813–828. <http://dx.doi.org/10.1080/01411926.2010.501096>

- Foreman, P., & Arthur-Kelly, M. (2014). *Inclusion in action* (4th ed.). South Melbourne: Cengage Learning.
- Fuchs, D., & Fuchs, L. S. (1998). Researchers and teachers working together to adapt instruction for diverse learners. *Learning Disabilities Research and Practice, 13*(3), 126–137.
- Golder, G., Norwich, B., & Bayliss, P. (2005). Preparing teachers to teach pupils with special educational needs in more inclusive schools: Evaluating a PGCE development. *British Journal of Special Education, 32*(2), 92–99. doi:10.1111/j.0952-3383.2005.00377.x.
- Good, R. H., Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. *Scientific Studies of Reading, 5*(3), 257–288.
- Griffin, M. L., & Warden, M. R. (2006). The effects of a university. *International Journal of Learning, 13*(5), 187–194.
- Grima-Farrell, C. (2014). Curriculum-Based Measurement of Oral Reading fluency (CBM-R): An objective orientated evaluation study. *Support for Learning, 29*(4), 370–393.
- Grima-Farrell, C. (2015). Mentoring pathways to enhancing the personal and professional development of pre-service teachers. *International Journal of Mentoring and Coaching in Education, 4*(4), – <http://dx.doi.org/10.1108/IJMCE-07-2015-0020>
- Grima-Farrell, C., & Coleman, J. (2015). An evolving intercultural partnership model: A collaborative Australian and Vanuatu initial case study. *Australasian Journal of University-Community Engagement, 10*(1), 41–64.
- Grima-Farrell, C. R., Bain, A., & McDonagh, S. H. (2011). Bridging the research-to-practice gap: A review of the literature focusing on inclusive education. *Australasian Journal of Special Education, 35* (2), 117–136. doi:10.1375/ajse.35.2.117; <http://dx.doi.org/10.1375/ajse.35.2.117>
- Individuals with Disabilities Education Improvement Act. (2004). Pub. L. No. 108-466, 20 U.S.C. §1400, H.R. 1350.
- Innes, R. B. (2007). Dialogic communication in collaborative problem solving groups. *International Journal for the Scholarship of Teaching and Learning, 1*(1), 1–19.
- Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., Wilkinson-Flicker, S., & Kristapovich, P. (2014). *The condition of education 2014 (NCES 2014–083)*. U.S. Department of Education, National Center for Education Statistics. Washington, DC. Retrieved [date] from <http://nces.ed.gov/pubsearch>
- Korthagen, F. A. J. (2007). The gap between theory and practice revisited. *Educational Research & Evaluation, 13*(3), 303–310.
- Lee, F., Tracey, D., Barker, K., Fan, J., & Yeung, A. S. (2014). What predicts teachers' acceptance of students with special educational needs in kindergarten? *Australian Journal of Educational & Developmental Psychology, 14*, 60–70.
- Loreman, T., Deppeler, J., & Harvey, D. (2011). *Inclusive education: Supporting diversity in the classroom*. Crows Nest: Allen & Unwin.
- Loreman, T., Forlin, C., Chambers, D., Sharma, U., Deppeler, J. (2014). Conceptualising and measuring inclusive education. *Measuring inclusive education (International Perspectives on Inclusive Education)* (vol. 3, pp. 3–17). Bingley: Emerald Group Publishing Limited.
- MCEETYA (Ministerial Council on Education, Employment, Training and Youth Affairs). (2008). *Melbourne declaration on educational goals for young Australians*, MCEETYA. Available at http://www.mceecdya.edu.au/mceecdya/melbourne_declaration,25979.html
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks: Sage Publications.
- National Joint Committee on Learning Disabilities. (1999). *Professional development for teachers*. Available from www.ldonline.org/njclcd
- No Child Left Behind (NCLB) Act of 2001, 20 U.S.C.A. § 6301 *et seq.*
- Olswang, L. B., & Prelock, P. A. (2015). Bridging the gap between research and practice: Implementation science. *Journal of Speech, Language, and Hearing Research, 58*(6), 1818–1826.

- Osgood, R. L. (2008). *The history of special education: A struggle for equality in American public schools*. Westport: Praeger Publishers.
- Singal, N. (2008). Working towards inclusion: Reflections from the classroom. *Teacher & Teacher Education*, 24(6), 1516–1529.
- Slee, R. (2011). *The irregular school: Exclusion, schooling, and inclusive education*. New York: Routledge.
- The ERIC clearinghouse on disabilities and gifted education. (2003). Using data: Innovative ways to improve results for students with disabilities. *Research Connections in Special Education*, 13(1), 3–10.
- UNESCO. (1994). *The Salamanca statement and framework for action on special needs education*. Paris: UNESCO.
- UNICEF. (2007). *Promoting the rights of children with disabilities*. http://www.un.org/esa/socdev/unyin/documents/children_disability_rights.pdf
- Vaughn, S., Klingner, J., & Hughes, M. (2000). Sustainability of research-based practices. *Exceptional Children*, 66(2), 163–171.
- Villa, R. A., & Thousand, J. (2000). Inclusion: Welcoming, valuing, and supporting the diverse learning needs of all students in shared general education environments. *Special Services in the Schools*, 15(1), 73–108.

Chapter 2

The RTP Literature: Mind the Gap!

Foundational to the Development of the RTP Survey

One of the most common and serious mistakes made by leaders of a change process is to presume that once an innovation has been introduced and initial training has been completed the intended users (teachers) will put the innovation into practice. (Hord et al. 1987, p. v)

Abstract Much has been said about the research to practice gap in education. Exploring this body of knowledge is foundational to forging the pathway forward in reducing the RTP gap. A review of the literature about the research to practice gap over the last 40 years reveals that there have been few empirical studies that focus on the factors impacting upon research becoming practice in inclusive education settings. Given the large number of commentary claims and limited number of direct research based examples located during a Research to Practice literature (RTP) search, this review exceeded beyond the intended parameters. It was expanded as the search for empirical research to practice based knowledge continued. The review of one body of knowledge led to the review of another body of knowledge and this chapter is organised around the five bodies of knowledge that are reported to contribute to the successful implementation of research in schools. These five areas include: Research to Practice literature (RTP), Professional Development (PD), Teacher Education (TE), Comprehensive School Reform (CSR) and the Concerns Based Adoption Model (CBAM). Collectively this knowledge substantiates the need for research that responds to calls to sustain the use of research in school settings.

Key RTP areas, themes and factors within and across the five bodies of literature are synthesised in this chapter. They are described in detail and inform the 75 point Research to Practice survey and subsequent data collection tools described in Chap. 3. This analysis and use of the RTP literature proved pivotal to moving forward in creating the RTP cycle to enhance the implementation and sustained use of research to address the diverse needs of students in school settings.

This chapter:

- reviews the key issues that has evolved around the research to practice gap over the last 40 years. It also acknowledges the significant RTP contributions shared in 1997.
- highlights the limited empirical studies in inclusive education settings.
- reviews the five main bodies of literature that strive to link educational research and practice efforts. These areas include; RTP, Professional Development (PD), Teacher Education (TE), Comprehensive School Reform (CSR) and the Concerns Based Adoption Model (CBAM).
- identifies specific factors that affect the RTP gap that are not generated by any single body of knowledge.
- summarises key themes and factors within and across each body of knowledge to consider when addressing the research to practice gap in inclusive education settings. Research is summarised and tabulated within this chapter.
- presents a well-supported framework that synthesises key RTP themes and factors that was used to inform the data collection tools created for the study.

Vignette

Why the discrepancies between research and practice when the similar student centred goals drive both researchers and practitioners?

I haven't been able to understand why the educational research I read about seemed to orbit within universities or research centre circles. Why didn't this valuable work find its way into classrooms to assist teachers and their students in attaining desired goals? If validated research did make its way into schools, why was it not sustained? We have read about the strengths of research-based applications, but why do they seem so inaccessible to educational practitioners?

I've heard my school based colleagues state that research doesn't *stick* in real classroom applications because researchers are so far removed from the contextual realities of the classroom. On the other side of the concern, I've heard my university colleagues state that they work so hard to create validated programs yet their efforts seem to be fruitless as they are not implemented by school based staff.

These concerns are not new. We have heard them repeated time and time again, across multiple disciplines. Yet educational researchers and school-based staff are striving to achieve the same goal, enhancing student outcomes within cultures that are inclusive of all students. Globally we are striving for the same goals, we are well versed in the research to practice concerns and have been for a very long time, so why hasn't the gap between research and practice been reduced?

This chapter describes my search of the literature for recommendations that could be further investigated to generate a workable solution to the RTP gap.

2.1 Introducing the Need to Bridge the Research-to-Practice Gap

The inability of educational researchers and classroom practitioners to “bridge the gap” between our accumulated knowledge about effective inclusive educational practices and the extent to which these practices are applied in classrooms is well documented. Yet surprisingly there is limited empirical evidence that directly examines these assertions in practice. Relevant related research that contributes to knowledge on research to practice has been identified via a spectrum of intervention research examples and large-scale reform efforts whose criteria was driven by the implementation of research-based practices. However, the evidence-based active ingredients that contribute to assisting practitioners transfer strong research-based projects into practice continues to be sought.

This discussion of the RTP gap continues to be extensive amongst school based educators and educational researchers alike. The usual suspects such as the lack of time, funds and resources are offered as causes for the concern, but still the need to delve deeper and advance our knowledge on **how** research based practices can be successfully used for educating students with and without disabilities exists. This knowledge is important as it can underpin efforts to make classrooms and schools more inclusive. It is time to drill down and specifically focus on the critical ways we can sustain the use research to enhance student gain in inclusive classroom settings.

This chapter integrates, in a narrative approach, the larger commentary literature with a smaller number of related research studies. It is presented in three sections. The first section revisits the area of inclusion in order to situate the study and explain the content, context and circumstances for the RTP issues investigated. Five main bodies of literature that strive to link educational research and practice efforts are reviewed to deepen understanding of the RTP gap in inclusive education.

The second section identifies the key consistencies in RTP factors across the five bodies of literature that have been reported to contribute to the status of research-based projects. This literature, while limited in terms of direct RTP examples, explored the five areas including RTP, Professional Development (PD), Teacher Education (TE), Comprehensive School Reform (CSR) and the Concerns Based Adoption Model (CBAM). The PD and TE searches focussed specifically on the translation of RTP. The CSR literature was examined as it constituted a large-scale effort, with guidelines specifically requiring the implementation of research-based practices at scale. The CBAM was explored as it represented a popular and widely used longstanding model related to adopting school change. The purpose of including CSR and CBAM was to go further in identifying more specific factors not generated by the RTP, PD, and TE literature.

The third section summarises each of the five areas of the literature and identifies key themes and factors to consider when addressing RTP in inclusive education settings. It incorporates Table 2.1.

Table 2.1 Consistency and development of RTP literature based within and across identified areas

Research-to-practice	Professional development	Teacher education	CSR	CBAM
Collaboration	Collaboration	Collaboration	Collegiality	Collaboration
Shared responsibility, understanding, contribution and ownership (Gunstone and Northfield 1986; Hall 1980; Louis and Jones 2001)	Joint partnerships (Ysseldyke 1989; Gersten and Vaughn 1997; Gravani 2008)	Joint partnerships/active involvement (Klingner et al. 2004; Malouf and Schiller 1995)	Need for complete theory framework (Bain 2007)	Shared ownership of the elements involved in and resulting from the change process (Horsley and Loucks-Horsley 1998; Rutherford 1982)
Collegiality, mutual respect and cooperation (Foegen et al. 2001; Foorman and Moats 2004; Fuchs and Fuchs 1998, 2001; Toch 1982; Vaughn et al. 2001)	Mutually identified boundaries, structures and purposes (Gravani 2008)	Teacher contribution and involvement in the research process (Billups et al. 1997; Darling-Hammond 1994; Gravani 2008; Grimes and Tilly 1996)	Intersection of process and content (Tyack and Cuban 1995)	Shared acknowledgement of changing needs of stakeholders and environments (Miles and Huberman 1994; Rutherford 1982)
Substantive frequent interaction and communication (Carnine 1997; Sydoriak and Fields 1997; Toch 1982)	“Buy in” from all stakeholders (Klingner et al. 2003)	Multiple level feedback (Grimes and Tilly 1996)	Adequate and complete design (Bain 2007; Bain and Hess 2001)	Understood by all and united (Pratt et al. 1982)
Feedback (Carnine 1997; Sydoriak and Fields 1997)	Engagement in pursuit of genuine questions, problems and solutions (Sydoriak and Fields 1997; Vaughn et al. 1998)	Responsive, cohesive course structures (Miller et al. 2005)	Self reinforcing (Bain 2007)	Awareness of shared ownership and individual strength (Rutherford 1982)
		Mutually aligned norms, expectations and roles (Goodlad 1993)	Well aligned system and policy goals (Bain 2007)	Communities of practice (Davidson 2010)
		Critical in developing links between theory and practice (Winn and Zundans 2004)		
		Consistent and coherent (Grimes and Tilly 1996)		
		Flexibility (Mac Iver et al. 2003)		

Resource support and PD	Support	Support	Supportive environments and structures	Support through change
Long term with adequate time and materials (Bain 2007; Fuchs and Fuchs 2001; Klingner et al. 2003; Schneider and McDonald 2006; Vaughn et al. 2000)	Teachers need to feel sufficiently prepared	Addresses teacher enthusiasm and concerns (Gersten and Vaughn 2007; Miller et al. 2005)	Emergent feedback (Bain 2007)	Sustained assistance (Horsley and Loucks-Horsley 1998; Rutherford 1982)
Positive attitude from students and peers and pride in academic achievement (Foorman and Moats 2004)	Networks (Klingner et al. 1999)	Awareness of fatigue and exhaustion (Gersten and Vaughn 2007; Miller et al. 2005)	Evaluation as an emergent function rather than an add on (Bain 2007)	Support structures must change as needs change (Horsley and Loucks-Horsley 1998; Rutherford 1982)
Well developed student materials (Klingner et al. 2003)	Sufficient instructional time (Klingner et al. 2003)	Support personnel qualities and attributes (El-Dinary et al. 1994)	Use of systemic technology (Bain 2007)	Beyond individuals (Miles and Huberman 1994)
Consistent professional development (Billups et al. 1997; Gunstone and Northfield 1986)	Adequate resources (Klingner et al. 2003)	Need for theory and well designed programs to make TE more coherent (Grimes and Tilly 1996)	Long term and consistent (Hurley et al. 2001)	From multiple agencies, levels and agendas (Pratt et al. 1982)
Address needs (Billups et al. 1997; Carmine 1997; Louis and Jones 2001)	Ongoing stakeholder support and assistance (Klingner et al. 2003)	Adequate depth and time to research-based practices (Foorman and Moats 2004)	Well developed student materials, teacher manuals, assessment and training (Slavin 2004)	Within realistic time frames (Horsley and Loucks-Horsley 1998)

(continued)

Table 2.1 (continued)

Research-to-practice	Professional development	Teacher education	CSR	CBAM
Active teacher involvement (Sydoriak and Fields 1997)	Limiting competing demands to achieve a balance of multiple agendas (Vaughn et al. 1998)		Professional Lives acknowledgement of the need for recognition and reward (Bain 2007)	
Review research to increase research knowledge (Sydoriak and Fields 1997)	Scientifically based instructional practices (Little and Houston 2003)		Instructional leader support for the project (Hurley et al. 2001)	
	Evidence-based and proven to be effective with an integration of instruction, assessment and classroom management components (Kutash et al. 2009; Slavin 2004)		Regular identification of student progress (Mac et al. 2003)	
Responsiveness of research	Central to students learning and students performing well (Klingner et al. 2003) Viewed as credible by teachers (Klingner et al. 1999) Comprehensive (McLeskey and Billingsley 2008) Responsiveness	Responsiveness of university education programs	Scalability and educational power	Research-based change process

Useable (Billups et al. 1997; Carmine 1997; Louis and Jones 2001)	PD programs must respond to genuine teacher needs and concerns (Little and Houston 2003)	Joint partnerships (Miller et al. 2005)	Use of scientific research (Borman et al. 2002)	Responds to personal growth in knowledge and skills (Horsley and Loucks-Horsley 1998; Rutherford 1982)
Practical and responsive to needs (Carmine 1997; Lloyd Weintraub and Safer 1997)	Reflective of student and staff needs (Little and Houston 2003)	Research-based (Slavin 2004)	Validated with scalability potential (Bain 2007; Borman et al. 2002)	Process not an event (Hall 1980; Horsley and Loucks-Horsley 1998; Pratt and et al. 1982)
Accessible (Billups et al. 1997; Carmine 1997)	Responds to classroom contexts and organizational demands (Klingner et al. 2003)	Effective delivery (Foegen et al. 2001)	Joint partnerships (Borman et al. 2002)	Change is a highly personal experience (Horsley and Loucks-Horsley 1998; Rutherford 1982)
Trustworthy (Carmine 1997)	Consistency (Billups et al. 1997; Gunstone and Northfield 1986)	Good contextual fit (Miller et al. 2005)	School level design for school level influence (Bain 2007)	PD should occur over time and be dynamic in addressing varying participant needs and abilities (Rutherford 1982)
Evidence-based (Slavin 2004)		Valued by students (Winn and Zundans 2004)	Effective adoption (Appelbaum and Schwartzbeck 2002)	
Manageable and efficient (Carmine 1997; Gunstone and Northfield 1986)		Address real life needs and concerns (Little and Houston 2003; Klingner et al. 2003)	Self reinforcing (Bain 2007)	
Examined in rich contexts and grounded in practice with research details provided (Billups et al. 1997; Carmine 1997; Sydoriak and Fields 1997)		Need for opportunities and time for practical development of classroom based skills and knowledge (Winn and Zundans 2004)	Continuous program structure and logical progression (Mac et al. 2003)	
Joint ownership (Sydoriak and Fields 1997)				

Table 2.1 is a comprehensive table that presents the consistency and expansion of RTP factors within identified themes, across the five areas of literature. This knowledge was foundational to the construction of a 75 point Research to Practice survey used in this investigation.

2.2 Stating the Research to Practice Case in Inclusive Education: A Perspective Grounded in Four Decades of Literature

A strong body of research evidence exists about programs and interventions that cater for student diversity and inclusive efforts. This includes research into Curriculum Based Measurement (CBM) of reading which has developed at a rapid rate over the past decade (Grima-Farrell 2014; Madelaine and Wheldall 2004; Stecker et al. 2005). Strong evidence for the technical characteristics, validity and positive effects of CBM for reading has been produced. Other validated teaching strategies for inclusive settings include mathematical instructional techniques, peer mediation, cognitive strategies, direct instruction and co-operative learning strategies (Earles-Vollrath 2012; Martens et al. 2007; McGrath and Noble 2010).

Despite the solid research base supporting the overwhelming research benefits of CBM, direct instruction, co-operative learning techniques, peer tutoring and other research-based intervention techniques, the implementation of these strategies has varied considerably. Many studies have highlighted the advantages of these interventions (predominantly in American schools). However there is a limited body of research available that provides evidence that these validated interventions are extensively employed and sustained by teachers in school settings. Furthermore educational policy frameworks encourage the widespread implementation of these strategies (including peer tutoring, co-operative learning, direct instruction and curriculum based measurement) but their articulation in practice has remained an immense challenge (Black-Hawkins and Florian 2012; Forlin et al. 2015; Greenstein 2014; Grima-Farrell et al. 2011; Hattie 2009; Korthagen 2010; Kurniawati et al. 2014; Lipsky and Gartner 1998; Schulz 2010).

The translation of RTP is a complex process involving change at multiple school and system levels. Forlin (2007, 2010) states that for inclusive education to become a reality, teachers need to be sufficiently trained and willing to support this reform (Black-Hawkins and Florian 2012; Darling-Hammond 2011; Forlin et al. 2015). The relevance of including ideas from critical pedagogy within research and practice in inclusive education, has been recommended as a useful tool for dealing with such issues (Greenstein 2014).

A range of teacher training sources exists for the purpose of sustaining and scaling RTP. Some of these training experiences include PD events led by school systems or consultants as well as university pre service and graduate teacher education programs. Teacher education has been presented throughout the literature as a key source of educational change in RTP (ARACY 2013; Black-Hawkins and Florian

2012; Department of Education and Training 2015; Forlin et al. 2015; Darling-Hammond 2006a; Gravani 2008; Kurniawati et al. 2014). Teacher education is at the heart of this study as all participants experienced the same Master's of Inclusive Education program. The Masters program intentionally and collaboratively linked school and university RTP efforts. It was designed to develop an understanding of the research-based practices that assist children with and without disabilities through the merger of resources, knowledge, and talents of academics, general and special educators.

It is important to note that along with teacher education, inclusion also remains central to the core of this work in that it refers to the commitment to educate each child, to the maximum extent appropriate, in the school and classroom he or she attends. It is the right of all individuals with and without disabilities to be included in naturally occurring settings and activities with their siblings and neighbourhood peers (Foreman and Arthur-Kelly 2014). This requires educators to respond to the diversity of student needs using practices and approaches that have been shown to be beneficial to students with and without disabilities. Raising awareness of the factors that have supported the implementation and sustainment of research-based strategies, can provide educators and researchers with a deeper understanding of ways to use research to cater for the needs of the of diverse learners in mainstream settings.

This approach to inclusive education represents a whole school responsibility that strives to align special education with general education; in a way that effectively and efficiently imparts quality education to all students (Grima-Farrell et al. 2011). The conceptualization of inclusion (as described in Chap. 1) remains of importance to RTP initiatives, as those initiatives require education systems to respond to the diversity of all learners. The following section strives to identify the factors critical to implementing and sustaining research in schools and classrooms. The initial proposed search of the literature expanded beyond expectations. It commenced with RTP and was then extended to other fields to gain increased insight and illustrate the realities involved in the application of research to practice in inclusive school based situations. These details are described in this chapter to highlight the importance of comprehending the context of theory and research to ensure valid inferences are made for future RTP trajectories.

Data collection tools were developed from the RTP factors collected through this review in an attempt to bind the content, context and circumstances that link RTP efforts in classroom applications. The following RTP section presents the challenges associated with linking educational RTP in an inclusive education frame.

2.3 Research-to-Practice

This book specifically explores the long-standing concern that evidence-based research knowledge is not being used to its full potential in practical applications. It also identifies that the need to narrow the gap between research and practice is

especially compelling in the area of inclusion (Cornelissen et al. 2013; Danforth and Naraian 2015; Grima-Farrell et al. 2011; Mitchell 2008; ARACY 2013).

A brief explanation of the terms theory and research are presented to promote consistency in the interpretation of terms used throughout this book. It is acknowledged that the term theory is over interpreted to mean both theory and research in RTP literature. The term 'theory' represents a depth of thought, concepts and ideas that provide an explanation of how and why a phenomenon exists. The term 'research' refers to the use of facts and information collected from the gathering of data that has contributed to increased knowledge and may be used to support or test theory (Bogdan and Biklen 1982; Miles and Huberman 1994). The oversimplification and synonymous use of these terms may be problematic. The purpose of this chapter is not to debate the terminology issue, but to acknowledge the way in which terminology has been conflated in discussions of RTP issues. Therefore in order to seek clarity for the purpose of this work, the term RTP was investigated.

An initial broad literature search using the descriptor RTP located 54,332 references. Many of these results, made references to a wide range of areas including public health, medical, alcohol and drug related fields and education. While RTP in these fields is of interest, their paradigmatic condition, evolution and state of professional practice, and service delivery approaches were sufficiently different from that of education to render them beyond the scope of this work. The introduction of the term education as a descriptor narrowed the search to 20,126 references, yet public welfare, social services and medical care continued to feature strongly.

Additional search parameters were refined to include relevant studies from 1967 to the present that were located through an EBSCOhost (Education) database search. EBSCOhost was selected as it included the most complete selection of references with the least number of repeated entries. Knowledge of the causes, cures and general assertions pertaining to the RTP gap was largely based on commentary or position pieces. Many of these claims included researchers drawing upon the cumulative experience of others in the field to offer suggestions as to why the gap exists and ways to address these concerns (Carnine 1997; Earles-Vollrathe 2012; Foegen et al. 2001; Foegen 2012; Gersten and Vaughn 2007). No empirical research examples that directly examined the combination of RTP factors and experiences, using a number of research-based programs across a variety of settings were identified. Given the lack of this type of direct empirical investigation of RTP, information was sought from RTP commentary and research-based interventions and the related work from recent school reform efforts; teacher education and the Concerns Based Adoption Model.

Studies were reviewed if they appeared in a published peer-reviewed journal and identified specific RTP, professional development (PD), teacher education (TE), Comprehensive School Reform (CSR) or Concerns Based Adoption Model (CBAM) factors which could be beneficial in translating the work of researchers to address the needs of students in school settings. Descriptors were introduced in the following sequence: RTP including terms being, scientific-based, rigorous, evidence-based, validated and research-based (1158 references), inclusive education including similes inclusion, mainstream and integration (limited results), education (440 ref-

erences), research-into-practice and education (89 results). Of the 89 articles located using the terms RTP and education, 39 were selected for this review as they specifically discussed the use of research-based programs in primary, secondary and university settings.

A second search was conducted regarding PD, as RTP is a common focus of PD efforts although it is not treated in depth in many discussions (Ax et al. 2008; Klingner et al. 2004). The identification of relevant literature commenced with an all-field search using *Research-To-Practice*, *education* and *professional development* as descriptors. Of the 296 citations, many made only brief mention of RTP issues and included work in fields of nursing, engineering and mental health. An abstract search using the same descriptors identified eight articles that specifically presented detailed discussions of PD as a comprehensive or longitudinal approach to address the RTP gap in education.

A third search was conducted in the area of teacher education. TE represented an avenue that links the efforts of researchers and educators who work in inclusive education environments to enhance RTP endeavours (Darling-Hammond 2011; Everington and Hamill 1996; Korthagen 2007). Like PD, TE was expected to have a RTP agenda, and the TE literature revealed that it was often discussed in depth (Carmine 1997; Darling-Hammond 2006a; Gravani 2008). An all-field search using *RTP* and *teacher education* as descriptors located 440 references. A review of the abstracts identified that many references made only limited mention of RTP issues. Subsequently, this search was refined through an abstract search using the same descriptors and located 90 references. These articles were scrutinised and 12 were located based on the criteria that they must have made reference to TE and identified RTP factors. Of these 12 references a refined search was conducted and four offered a sound representation of RTP implementation factors as a result of TE efforts.

The review was then expanded to gain additional knowledge on other factors that had an impact on the RTP phenomenon and could inform the way research is established in practice. Comprehensive School Reform (CSR) and Concerns-Based Adoption Model (CBAM) movements represent such approaches. These initiatives have the capacity to deepen our comprehension of change elements through direct research examples and in turn raise an awareness of related RTP factors.

A fourth literature search was conducted in the area of Comprehensive School Reform as it represents a large-scale effort whose guidelines specifically require the implementation of research-based practices at scale. An all-field search using *comprehensive school reform* as a descriptor located 1168 references. A review of the abstracts identified that many references made only limited mention of RTP issues. Subsequently, this search was refined through an abstract search using *CSR* and *implementation* as descriptors, which located 110 references. This search was further refined when *program implementation* replaced *implementation* as an abstract search descriptor as it aimed to identify the implementation concerns that may constitute RTP issues or factors. Of the 12 references that were located as a result of this refined search eight offered a sound representation of RTP implementation factors as a result of CSR efforts.

The fifth and final search was conducted in the area of Concerns Based Adoption Model as it represents a prolific longstanding model related to adopting change. Increased knowledge of concerns associated with change may raise awareness of ways to promote future RTP efforts. An all field search conducted using *Concerns-Based Adoption Model* as a descriptor located 187 references. A review of the abstracts identified that many references made only limited mention of RTP issues. Subsequently, this search was refined through an all field search using *Concerns-Based Adoption Model* and *Program implementation* as descriptors and located 25 references. These articles were scrutinised based on the criteria that they must have made reference to CBAM and identified RTP factors. Many of these references presented descriptive aspects of CBAM. A final search using *Concerns-Based Adoption Model, research* and *practice* as descriptors in an abstract search located six references. Of these references five references presented a sound representation of RTP implementation factors as a result of CBAM efforts.

Half of the studies reviewed were undertaken in schools and the knowledge gained from this extensive review of the literature is described and presented in the following five sections: (1) RTP factors and themes identified through RTP commentary claims and related RTP examples, (2) RTP factors and themes identified through the PD literature, (3) RTP factors and themes identified through the TE literature, (4) RTP factors and themes identified through the CSR literature and (5) RTP factors and themes identified through the CBAM literature.

2.3.1 Research-to-Practice Literature Based Knowledge

Given the global directives that encourage the use of research in schools, it was surprising to note that commentary claims or position papers featured predominantly in the RTP search. Of the RTP references reviewed, 63% represented commentary claims or position papers while 37% presented RTP intervention research. Claims about RTP were generally based on indirect evidence. The primary focus of the intervention research was in the area of reading. There were no empirical research examples with a longitudinal, intervention-oriented focused specifically on RTP as a priority.

2.3.2 Synthesising Key COMMENTARY Claims and Assertions in the Research-to-Practice Literature

During 1997 RTP commentary claims spiked with powerful assertions such as the 'RTP' gap exists because research has not been designed to make a practical difference (Carnine 1997). Carnine (1997) identified three factors or characteristics that influenced RTP efforts. These were usability, accessibility and trustworthiness of

research. Usability was described as the practicality of use of the research based initiative by teachers in classrooms. Accessibility referred to the extent to which the initiatives were available to those who want to use them. Trustworthiness reflected the confidence that the practitioners had in the research findings. Carnine's (1997) themes of usability and accessibility built on early claims made by Coleman (1979), Eash (1968), and Guba (1967) who identified concerns related to transferring RTP. These concerns included: inadequate links between universities and schools, inadequate training, and lack of use by practitioners. Toch (1982) concluded that the failure of researchers and educators to cooperate contributed to their lack of communication, which impacted negatively on the research being applied in schools. Carnine (1997) later wrote that cooperation and communication are essential to developing trustworthiness.

Ways to support teachers in their efforts to translate RTP were identified by Gunstone and Northfield (1986). These suggestions included ensuring that the research questions are defined in terms of teacher practice with a focus on efficient and manageable interventions, collaborating with practitioners to establish feasibility, broadening the context for successful research-based demonstrations, and promoting school-based research (Carnine 1997). These solutions were supported by Lloyd et al. (1997) who emphasised that research should be responsive to practitioners' needs in order to effectively address the diverse needs of their students.

In order to address the usability, accessibility and trustworthiness of research, Billups et al. (1997) proposed that information regarding the research base should be included in school programs. It was suggested that this information should include who did the study, how it was conducted, in what setting, length of time, and evidence of its track record. Billups et al. (1997), Carnine (1997) and Lloyd et al. (1997) proposed that the relevant information should be disseminated in a user-friendly format so teachers can fully understand the implications and the extent of usefulness. Further, Sydoriak and Fields (1997) advocated for joint involvement and ownership between researchers and practitioners to increase the likelihood of research reaching classrooms in ways that are more reflective of 'real world' conditions.

According to Ysseldyke (1989, 2001) researcher training needs to be improved for the translation of RTP to occur. Gersten and Vaughn (1997) expanded on this suggestion by proposing that alternative researcher roles, including collaborators, facilitators and coaches, may reduce the gap between special education research and classroom practice, thus making classrooms more inclusive. Such an approach to enhancing collaborative links between researchers and practitioners may contribute to enhancing Carnine's (1997) notion of usability, as research is promoted as proactive rather than reactive (European Agency 2014; Ysseldyke 1989).

Slavin (2004) further proposed that educational reform needs a well-designed comprehensive approach to school-wide practice that is based on the best research available. As such, attending to details such as professional development, evaluation and comprehensive design are important. The integration of instruction, assessment and classroom management into a school-wide reform plan to meet the diverse needs of students is needed to ensure accessibility.

Consistencies in suggestions on ways to make research useable, accessible and trustworthy are highlighted in Table 2.1. Carnine (1997) and Sydoriak and Fields (1997) summarised these factors in their six principles:

1. the importance of practicality, concreteness and specificity of research-based practices;
2. the scope and magnitude of the intended change should not be too broad or too vague;
3. the research ideas need to be linked to classroom situations with opportunities to experiment with feedback;
4. the importance of collaboration and joint problem solving between researchers and practitioners, ensuring links to real life ‘classroom’ situations;
5. frequent and substantive interaction between researchers and teachers to give teachers the opportunity to discuss new practices; and
6. the research applications need to relate to improving learning for all students, not just students with disabilities.

Collectively, these principles propose the promotion of the sustained use of research, summarising concerns presented in studies over the last four decades. Further, Sydoriak and Fields (1997) advocated for joint involvement and ownership between researchers and practitioners to increase the likelihood of research reaching classrooms in ways that are more reflective of ‘real world’ conditions.

These longstanding concerns continue to feature with authors still searching for explanations for the RTP gap and how this can be addressed (Bradley and Reinking 2011; Cornelissen et al. 2013; Danforth and Naraian 2015; Vanderlinde and van Braak 2010). Global educational reform efforts and international educational policy directives have intensified efforts to promote the use of evidence based educational programs to promote student outcomes (Earles-Vollrath 2012; Smith et al. 2010). Most recently the RTP directions have promoted discussions between educational researchers and educators to support an inclusive and responsive education philosophy (Danforth and Naraian 2015; Greenstein 2014).

In summary, the RTP commentary claims support the need for strong collaborative links between educators and researchers as “research should be the foundation from which teaching and learning practices are developed and improved” (Burns and Ysseldyke 2009, p. 3). By working together researchers and practitioners may build joint interest and ownership of research-based practices. Consistent professional development efforts have been cited as a way to support teachers’ access to research-based practices. Concerns about the trustworthiness and usability of research have also been presented. The following section identifies research on interventions that have yielded some RTP knowledge that was used in the creation of the RTP survey (see Appendix 1).

2.3.3 Related RTP INTERVENTION Research That Substantiates Commentary

The previous section presents the factors that are asserted through commentary claims to impact upon research becoming practice in educational settings. This section builds on these claims to present the surprisingly small number of research examples (relating to individual projects) which identify factors have been claimed to reduce the RTP gap by striving to make research useable, accessible and trustworthy. The work by Foegen et al. (2001), Foorman and Moats (2004), Fuchs and Fuchs (1998, 2001), and Vaughn et al. (2001), expanded on the importance of the trustworthiness of research by promoting supportive partnerships and environments.

One of the significant active ingredients in research becoming practice is accessibility. Having the sound research-based practices available and an awareness of the need for increased knowledge of how to bring research to scale is essential (Foorman and Moats 2004). Other critical elements identified as contributors to sustaining and scaling research-based practices through this investigation include mutual respect, pride in academic achievement and collegiality in interactions. This knowledge was strengthened through Foorman and Moats' (2004) PD approach that emerged out of their research in Houston and Washington, DC. Their study was conducted in the Houston and involved 1400 children from 17 high-poverty, low-performing schools in Houston and Columbia. Conditions under which these children from Kindergarten to Grade 4 learn to read were examined. The data collection procedures were the same in both cities and involved frequent visits to the classrooms by observers, professional development staff, assessment personal and project faculty. All teachers used a comprehensive reading program with implementation supported by the publisher's consultants. By the end of the 4-year project, students in both cities were solidly at national averages in their reading scores. Although the achievement results were positive, contextual variables differed across the locations. The extent of PD differed. In Columbia, PD was multidimensional, while due to limited funds Houston's PD consisted of 4 days across the school year. On analysis of this reading intervention study Foorman and Moats (2004) concluded that an obstacle to moving sustainable research practices to scale include the slowness of teacher education and PD efforts.

Fuchs and Fuchs (2001) described how researchers and educators could work together more productively to produce methods that schools can continue to employ once the researchers work is complete. This follows Fuchs and Fuchs's (1998) description of efforts linking researchers and educators in Metro Nashville PHASES Public Schools. The Nashville study sought to identify principles for sustaining research-based practices through a school-wide study utilising Math Peer Assisted Learning Strategies (PALS). This study involved seven teachers across different schools. The authors claim that this model differs from traditional research due to the level of teacher involvement in the implementation and evaluation of the projects.

The model relied on ongoing collaboration between university researchers and school building level educators and included three phases. The first phase involved implementing a pilot process where teachers reflected on their concerns and worked with researchers to implement an innovation. Formal testing of the innovation occurred during the second phase, with schools, districts and state departments providing support to scale up the innovation in the third and final phase. The results of the study described the importance of making instructional decisions that are specially tailored to the needs of individual students. This research example united educators and researchers as partners in planning, implementing, providing feedback and problem solving. The study found that these partnerships only survived when both sides worked continuously to preserve them. It should be noted that during this research many challenges arose, such as the state adopting high-stakes achievement tests, which increased anxiety levels, making partnerships more susceptible to mistrust.

Fuchs and Fuchs (2001) discussion made reference to this PALS investigation and indicated that inadequate demand for validated practices represented a major reason for their lack of use. The use of only one research-based intervention may be viewed as a limitation, yet this investigation reinforced the importance of shared responsibility.

A study examining the use of evidence-based instructional practices with students with special needs in secondary schools was conducted by Kutash et al. (2009). This study specifically considered: (i) the importance of effective intervention training for teachers, (ii) the degree of implementation fidelity required by teachers working with students with disabilities in implementing evidence-based practices, (iii) whether evidence based practices were sustained following the conclusion of the study (Kutash et al. 2009, p. 919). The study responded to concerns specified in the No Child Left Behind Act (U.S Department of Education 2001) regarding both a lack of effective teacher training, and the inability of teachers to maintain fidelity in implementing evidence-based practices in schools.

Participants in the study included 87 students (predominantly male), ten middle school, and five high school teachers. Teachers participated in five training sessions over a 16-month time period with a booster session 5 months after the final training session. Training focused on four *evidence-based strategies manuals*: enacting reading comprehension, formative evaluation, positive behaviour supports, and family involvement. Key RTP procedures used in the implementation phase of the study included collaborative agreement, ownership of content, ongoing professional development, and the provision of feedback and support to teachers when requested/required. Data were collected at two time periods post training, 5 months and 13 months, using: the Wide Range Achievement Test 3, class schedules, documented absences and discipline incidents, and the Fidelity of Evidence Based Strategies Manuals. The results indicated that at 5 months following training, 62% of the evidence-based strategies had been implemented overall, with variation in range of implementation between 44% (enacting reading comprehension) and 77% (positive behaviour supports) across modules. These levels were maintained 13-months after training. Longitudinally, students achieved significant improvements in read-

ing and overall levels of inclusion as a consequence of higher levels of teacher implementation of evidence-based practices. This study identified that with appropriate supports and training, the implementation of evidence-based practices resulted in improved student outcomes and the sustained use of evidence-based practices by teachers over time.

The findings of Foegan et al.'s (2001) study, which examined preservice teacher beliefs on curriculum-based measurement utility and validity, contributed to our understanding of the shared responsibility factor. The authors' videotaped presentations on curriculum-based measurement (CBM). In one presentation, statistical information that supported CBM's validity and utility was provided. The second presentation included anecdotal accounts in first-person, which supported CBM's utility and validity. After watching the videotape, participants completed a questionnaire about their beliefs about CBM's utility and validity. The results revealed no effects for presentation format yet participants' beliefs were more positive about the utility of CBM than about its validity. Foegan et al. (2001) presented the need for researchers to better disseminate their research and for practitioners to more actively review the research.

Researchers alone are said to be incapable of bridging the RTP gap. In sum, these studies have indicated that commitment and collaboration between researchers and educators at planning, implementation and sustainment phases of research-based interventions is beneficial in promoting RTP efforts. Collectively they suggest that to increase the demand for research, researchers must work with educators to produce innovations that are validated and PD efforts need to ensure meaningful dissemination of research findings.

Collegiality, mutual respect, time, resources, comprehensiveness, emergent feedback, implementation integrity, long-term support, pride in achievement, communication, shared responsibility, and positive student and peer responses were factors identified to enhance supportive environments to promote the usability, accessibility and trustworthiness of research (Bain 2007; Fuchs and Fuchs 2001; Klingner et al. 2003; Schneider and McDonald 2006; Vaughn et al. 2000). Further, Foegen et al.'s (2001) work with preservice teachers advocated that better dissemination of research and practitioner review was required. Fuchs and Fuchs (2001) similarly found that partnerships only survived when both sides worked continuously to preserve them.

Examples of professional development built on themes of accessibility, trustworthiness and usability (Foorman and Moats 2004). Obstacles to moving sustainable research practices to scale included the slowness of TE and PD efforts. Other factors identified as contributors to sustaining and scaling research-based practices included the availability of sound research-based practices, and an awareness of the need for increased knowledge of how to bring research to scale (usability). Mutual respect between professional development staff and teachers, student and teacher pride in academic achievement, and collegiality in interactions among stakeholders were identified as features that can enhance trustworthiness and narrow the RTP gap through addressing diverse student needs.

In 1998 the Department of Education, Training and Youth Affairs (DETYA) conducted a study with the Australian Research Council (ARC) that provided addi-

tional support for the many factors identified through RTP commentary claims. The study sought to explore the impact of Australian educational research, with particular respect to uptake in schools. The Research Evaluation Programme, managed by the DETYA, identified five studies that presented different perspectives on the impact of educational research in Australia and offered a broad insight into the influence of Australian educational research. The first study *Mapping Educational Research and its Impact on Australian Schools* is a comprehensive charting of Australian educational research and identified the published Australian educational research undertaken during 1992–1997. *Backtracking Practices and Policies to Research* appraised the influence of research on educators and *Teacher Knowledge in Action* analysed teachers' explanations of their decisions during a videoed lesson. Both groups mapped backwards from the practitioner through the network of influences to identify the impact of research on practice. *Education Research in Australia: A Bibliometric Analysis* assessed the international visibility of Australian educational research through lists of citations and inclusions in journals found in the Institute of Scientific Information (ISI) database. The Selby Smith report (1999), *The Relationships Between Research and Decision-Making in Education: An Empirical Investigation*, (as cited in DETYA 2000) adds the policy formulation perspective in relation to vocational education and training (VET). The results of this research confirmed that quality teacher education needs to develop good attitudes to research along with exposing educators to research-based knowledge that will assist them in catering for the needs of individual students. For research to be applied in an education context, researchers have to market their knowledge so that it is accessible and motivating. This requires a shift in what is valued in the work of universities (DETYA 2000).

The results of these studies support the need for the engagement between researchers and educators in the creation of 'new knowledge' and 'new solutions', adding that this interactive process must be multilayered (ARACY 2013; Carnine 1997; DETYA 2000; Sydoriak and Fields 1997; European Agency 2014). DETYA's (2000) results referred to the inadequacy of a conceived linear relationship between educational research and practice, and suggested a multilayered process of engagement between researcher and educator that is responsive and effective at all levels. Multi layering identifies those problems that need to be addressed in specific educational contexts, through the acknowledgment of individual attitudes, beliefs and a recognition of organisational structures that provide opportunities for feedback and communication with realistic expectations. The studies also expanded upon the understanding of the accessibility of research suggesting the need for clear, unambiguous language that is meaningful to educators. The importance of teacher education was emphasised, and the need for developing educators who value and use research to support change (Ax et al. 2008; Forlin et al. 2015; Gravani 2008; McLeskey and Billingsley 2008).

To summarise, the RTP commentary claims and related RTP research identified four common themes. The first theme calls for research to be responsive to the needs of educators and their settings. This theme has been identified through sub themes suggesting that research should be relevant, useable, trustworthy and accessible.

Research should be evidence-based, practical and manageable to ensure its transfer to direct practical applications. The second theme identified the need for effective professional development to actively involve teachers in reviewing research to gain a sound knowledge of research-based practices. PD needs to be consistent and address practitioner needs if it is to enhance the value practitioners assign to research findings.

The third theme entitled collaboration refers to the need for shared understanding, ownership, responsibility, collegiality and mutual respect. Collaborative efforts require effective cooperation and communication among all stakeholders. This approach may encourage frequent and substantive interaction catering for increased opportunities for feedback and discussion. The final theme pertains to resource supports. This falls from claims identifying the need for consistency in support (including time and resources) for all stakeholders. As RTP efforts are recognized as a process not a product, long-term support for projects that elicit positive attitudes from peers and students is required.

In conclusion, research that has attempted to identify the success of concerns about educational interventions has provided examples of ways in which researchers and practitioners can work toward making research usable, accessible and trustworthy. By analysing the intervention research it became apparent that while immediate application appears to be a high priority for practitioners, shared theoretical understandings are essential for educators and researchers to be able to work together (ARACY 2013; DETYA 2000; European Agency 2014; Grima-Farrell 2015).

The following section builds on this RTP knowledge and describes the role of professional development as a factor that can assist educators in creating successful educational experiences for all students (Billups et al. 1997; Foorman and Moats 2004; Forlin et al. 2015; Gunstone and Northfield 1986; Klingner et al. 2003; Little and Houston 2003; Mangope and Mukhopadhyay 2015).

2.4 Professional Development and RTP

A second round of review was conducted based upon the factors identified in the RTP literature. This was done to go further in identifying RTP knowledge that may be gained from related research. A brief description of PD is presented which is followed by the introduction of the articles that met the RTP and PD selection criteria for this review. Eight publications were identified that specifically presented a detailed discussion of PD as a comprehensive or longitudinal approach to address the RTP gap in education. An article on coaching located in the TE search is also presented in this section as it pertained to a PD intervention. Articles that made reference to PD in fields other than education and did not refer to the RTP gap were not selected for this review.

Fullan (2000) described PD as a continuous process, supported through mentoring, coaching, and feedback to address the perceived needs of the students within

individual classrooms and schools. It may be further defined as a complex and comprehensive process of change dependent on clearly articulated plans to address common goals (Borg 2015; Fullan 1993; Fullan and Hargreaves 1992; Goodrum 2007; Hord 2008; Mullen 2008; Sparks and Richardson 1997).

The importance of PD in relation to RTP efforts and special education was described by McLeskey and Billingsley (2008). Support for concerns of accessibility, usability, trustworthiness of research and the possible reasons for and solutions to the RTP gap in the area of PD were stated. They proposed the two most influential RTP gap factors are teacher preparation and the nature of the research conducted. McLeskey and Billingsley (2008) concentrated predominantly on issues related to the shortage of special education teachers, yet they promoted the need for comprehensive, coordinated, and sustained efforts in the area of teacher education to reduce the RTP gap.

A reconceptualised PD model involving a four-step process to promote quality and the use of scientifically based instructional practices was described by Little and Houston (2003). The occurrence of educational learning or change was identified as occurring when critical factors, including relevance to classroom needs, dependence on required support, collaboration of researchers and multiple educators within schools that can provide expert content knowledge, are met. This work increased awareness of factors that can reduce the RTP gap by promoting the quality of PD efforts through the use of scientifically based instructional practices. The model developed by the authors required collaboration among professionals within the research community, the State Department of Education, local staff developers, administrators and teachers. It was developed by Florida's State Department of Education and the University of Central Florida through the Effective Instructional Practices (EIP) project in an attempt to bring RTP. From the outset, the model was based on principles of educational change and adult learning theories. It involved a four-step process including the;

1. Identification of scientifically based instructional practices, in which specific criteria were developed as a standard to determine the efficacy of each scientifically based instructional practice in relation to access to the general education curriculum.
2. Selection of teams of teachers to attend awareness-level professional development, in which set criteria had to be met before the nominated applicants were accepted for attendance at the professional development institute. Teams generally consisted of a content-area teacher and a special educator.
3. Classroom implementation of scientifically based instructional practice from initial training to quality implementation for all students, in which mentors and coaches modelled and guided the participants through learning the content and discussing its application within their classrooms.
4. Data collection of the results of student learning through traditional and action research methodologies.

Implications of this RTP model of professional development indicated that educational learning or change could occur when critical factors were evident. These

factors included the relevance of issues to the classroom needs and the dependence on required support. A limitation of this study was that it did not test whether the transfer of RTP actually occurred. Calls for scientifically based instructional practices that are directly related to student needs were identified. The collaboration of multiple educators within schools and agencies and researchers was again viewed as a high priority.

Gersten et al. (1995) conducted an intensive coaching process to support general education teachers' adoption of research-based practices selected to improve reading performance of low-achieving students was studied. Key issues included the anxieties inherent to, and the variations in concerns and priorities of general and special educators. As such, general and special educators' varied perceptions emerged as a key issue in ways to bring research-based teaching into general education classrooms to cater for the needs of students with and without disabilities. Collaboration, including the use of collaborative decision-making teams across the school and the adoption of collaborative meeting process in all committees and groups, may rectify this issue (Gersten et al. 1995).

Joint partnerships with mutual boundaries between universities and schools were deemed important (Gravani 2008). Gravani (2008) reported that the cultural clash between researchers and teachers could be addressed through mutually identifying boundaries, structures and purpose. Gravani's (2008) qualitative case study with university teachers and secondary teachers' in Greece, collected data on participants' experiences and perceptions of a university led in-service training course. This research explored aspects of the relationships between academics and practitioners in the context of a professional development program. A total of 22 secondary teachers and 12 tutors interviewed over a 2-month period (May–June, 2001) reported on theory and practice, knowledge held, used and valued and the extent to which these features influenced their learning during the course of the program. Data collection consisted of transcripts of audio-recorded semi-structured interviews. Three major themes emerged from the analysis of these results. These themes included theory versus practice, in which academics suggested theory was the core of in service training while practitioners acknowledge practice as being the centrepiece of in-service training. The second theme identified propositional versus procedural knowledge, where the complimentary nature of propositional and practical knowledge is presented. Knowledge producers versus knowledge translators was the final theme, it identified that traditional roles need to move into an increased collaborative state so that the power and responsibility is shared.

Gravani's (2008) claim that this research is "fundamentally optimistic in that it does not indicate, however imperfectly, that rather than focussing on the gap, the discussion should be about the space" (Gravani 2008, p. 657), thus highlighting the importance of joint partnerships between universities and schools. The academic–teacher relationship continued to be one of the most important areas upon which future professional learning should be based. Mangope and Mukhopadhyay (2015) add that such relationships should be ongoing and that in-house mentoring should feature in teacher PD.

Gunstone and Northfield's (1993) case study of a preservice program for high school science teachers at Monash University was described as a representation of the authors' translation of RTP. The program identified student teaching as the first phase of career-long professional development. The Monash Program was comprised of two foundation subjects, Social Foundations of School (SFS) and Teaching and Learning (TAL). Two methods of teaching the subjects were involved. These included teaching practice with supervising teachers and a number of short service courses including educational technology and first aid. The authors prepared science teachers by integrating all components into a "single whole" focussing on the development of the student teacher. A major element in this approach was the use of seminar groups across all integrated subjects rather than lecture-based teaching. The authors identified the context as tangled and details were limited, yet they do promote the notion of the reflective practitioner and identify the benefits of maximizing student teachers' contacts with school pupils and teachers. Although this study did not describe the methodology in detail including the way data was collected, the RTP issues identified included the importance of ongoing PD and the need for it to be seen as credible by teachers.

Seven general education teachers and five special education teachers (secondary participants) undertook a yearlong intensive PD reading program (Vaughn et al. 1998). Teachers were taught four writing and reading practices in separate 9-week blocks. The program was designed to capitalize on key elements of effective PD through the involvement of teachers as researchers. These elements included involving teachers who were willing to learn only four successful research-based instructional practices, the provision of ongoing coaching and support with bimonthly meetings to discuss concerns. Data was collected through teacher interviews, implementation validity checklists, barriers and facilitator checklists, focus group interviews, researcher logs and classroom observations. Results indicated that sustained implementation was maintained by four of the seven general education teachers for the year. Three of the seven continued to display high implementation into the following year. The reading intervention promoted PD as a way of enhancing accessibility and usability of research by engaging teachers in pursuit of genuine questions. It identified that RTP efforts can be enhanced by establishing a collaborative link between researchers and teachers to build trustworthiness and balance their differing agendas, roles and responsibilities.

A follow-up investigation (Klingner et al. 1999) examined the extent to which seven of these teachers continued to use instructional practices they had learned as part of the original intervention. Six of the seven had continued to use one or more of the practices. A year later, Klingner et al. (2001) investigated the extent to which these practices had spread amongst teachers who were not part of the original PD. Findings indicated that programs designed to meet the needs of a range of students, were more likely to be maintained by teachers if peers perceived the practice as valuable, and a support network that allowed for discussion around implementation issues was in place.

Klingner et al. (2003) extended PD research efforts implementing four reading research-based practices with 29 teachers from six elementary schools. The results

of this study reported that the most frequently cited barriers to implementing programs included a lack of sufficient instructional time, too many competing demands on time, and a lack of materials. Findings described off-task students, interruptions, insufficient administrative support and classroom management challenges also made efforts to scale research-based practices difficult. Factors that assisted the implementation-included students enjoying the strategies, students performing well during implementation, administrative support, teachers feeling sufficiently prepared, materials being provided and ongoing support from the research team.

A key factor derived from Klingner et al. (2003) is that for research-based practices to be sustained and scaled in general education classrooms that include children with special needs, there must be 'buy in' from stakeholders at multiple levels and teachers must take ownership of the practices. The need for collaboration between researchers and teachers continued to be emphasised with a greater awareness of the considerable time required to balance the many roles and responsibilities essential to achieving the delicate balance between research and practice. This reading intervention research supports the claims that top down support for a bottom up model is required in bringing research efforts to scale (Darling-Hammond and McLaughlin 1995).

On analysis of the PD literature that related to RTP, four major themes were identified. The first theme, collaboration indicated the importance of joint partnerships and shared ownership between academics and practitioners. The PD literature expanded upon the initial notion of collaboration by identifying the need for mutually identified boundaries, structures and purposes (Foorman and Moats 2004; Klingner et al. 2003). 'Buy in' (voluntary support and participation in PD) from all stakeholders is said to strengthen the collaboration of multiple agendas within school and academic communities. Researchers proposed that the most promising forms of Professional Development engaged teachers in the pursuit of genuine questions, problems and solutions. This assertion led to the second theme, which once again suggested that research should be responsive to PD efforts. Although much of the PD knowledge has been gained through reading interventions, these references identify that the RTP gap may be reduced if research pursues genuine teacher needs and concerns. Claims that research needs to be relevant to classroom contexts so that programs directly relate to student needs were also identified (Foorman and Moats 2004; Grima-Farrell et al. 2011; Grima-Farrell 2015; Klingner et al. 2003; Vaughn et al. 1998). The third theme suggested the need for scientifically-based instructional practices. Calls for PD efforts to be based on instructional practices that have been proven to be effective were also evident. PD should be sustained, coordinated, comprehensive and seen as credible by teachers so they feel sufficiently prepared. This calls for the use of scientifically based instructional practices that respond to claims that teachers' intellectual and leadership capacity need to be catered for, as they are central to students learning.

Support in a PD context suggested the need for a support network that allowed for discussion of new practices and their implementation between practitioners and academics. The provision of adequate resources, sufficient instructional time and ongoing support from all stakeholders was cited as critical to effective PD efforts.

Limiting competing demands extends the notion of support in a PD context (Klingner et al. 2003). If PD is to be effective the demands placed on teachers must be manageable and realistic. Support in creating a manageable balance of multiple agendas is necessary.

These assertions echoed and expanded upon those identified in the RTP literature and suggested a need to limit competing demands in PD planning. If PD is to be effective, the demands placed on teachers must be manageable and realistic. Support in creating this manageable balance of multiple agendas is necessary for consistent PD efforts to address the needs of staff in their ability to cater for the needs of students with a diverse range of abilities. These PD factors are consistent with previous RTP assertions and built on the knowledge required by researchers and practitioners on ways to reduce the RTP gap. Factors within the identified PD themes are identified specifically in Table 2.1.

The following section expands upon those factors identified in the PD literature and describes teacher education as a way to influence RTP efforts (Everington and Hamill 1996; Golder et al. 2005; Villa and Thousand 1996). Research examples that confirm and expand upon RTP and PD assertions are presented.

2.5 Teacher Education and RTP

Teacher education (TE) in an inclusive education context is identified in both research and position papers as a key strategy in bridging the RTP gap, furthering the capacity to collaboratively link university and school efforts (Cornelissen et al. 2013; Darling-Hammond and Baratz-Snowden 2007; Gravani 2008; Winn and Zundans 2004). TE can assist in reducing the RTP gap as it represents an avenue linking the efforts of researchers and educators who work in inclusive environments to enhance RTP endeavours (Golder et al. 2005; Villa and Thousand 1996). Concerns about the difficulty in maintaining a collaborative link between university and school partnerships have been raised (Sirotnik as cited in Goodlad 1993). These concerns are based on the differing norms, roles and expectations of researchers and practitioners and are referred to as a 'cultural clash' between universities and schools. Yet the potential responsiveness of university education programs in ensuring the practical preparation of teachers continue to be presented as a way to enhance united RTP efforts (Carnine 1997; Miller et al. 2005; Miretzky 2007). Some researchers suggest that teacher education programs bear a heightened responsibility in addressing the long standing concern that evidence-based knowledge is not being used to its full potential in school settings (Devine and King 2006; Schmidt et al. 2002; Volonino and Zigmund 2007).

Teacher education programs have received extensive international criticism (Bereiter 2002; Cochran-Smith 2001; Edwards et al. 2002; Forlin et al. 2015; Korthagen 2001; Russell et al. 2001; Vavrus 2002; What matters most 1996; Zundans 2007). These issues relate to the lack of collaboration and relevance, course and content cohesion and delivery and lack of transference of knowledge into prac-

tical settings. They are common themes and concerns that are raised in RTP assertions and research. They interfere with the capacity of teacher preparation programs to address the theory into practice issues relating to the challenges associated with inclusion (Cochran-Smith 2001; Edwards et al. 2002; Gore et al. 2004). Yet the need for university and school educators to engage collaboratively was promoted as involving teachers in the research process in order to encourage deeper comprehension and ownership of research efforts (Cornelissen et al. 2013; Darling-Hammond 1994, 2013; Gravani 2008; Winn and Zundans 2004).

A third round of literature review was conducted that built on the factors identified in PD research and identified issues that link TE and RTP assertions. TE literature indicated that while RTP remained a concern, it was not treated in depth in many discussions (Darling-Hammond 2011; Gravani 2008; Korthagen 2007). Of the 12 TE research-based references located, only 4 offered a specific focus on TE as a way to address the RTP gap.

Darling-Hammond (2000) used an extensive data set to examine ways in which teacher education and other school factors related to student achievement. This dataset included a 50-state survey of policies, state case study analyses, the 1993–1994 Schools and Staffing Surveys (SASS), and the National Assessment of Educational Progress (NAEP). Quantitative analyses indicated that measures of teacher preparation strongly correlated to student achievement in reading and mathematics. Results suggested that policies adopted by states regarding teacher education, licensing, hiring, and professional development may make a difference to the capacities that teachers bring to their work. This work gave indirect support to the importance of TE in addressing RTP as teacher preparation has been shown to differentially affect teacher capacity in implementing research-based projects to ultimately enhance student achievement.

Miller et al. (2005) raised awareness of the impact of modifications to a school's organisational structure using a teaming approach. This descriptive case study was conducted at Centennial School of Lehigh University, an alternative day school for students with emotional and behavioural disorders and a teacher training facility. Centennial School comprised of 80–100 students and provided educational services to children with a disability. Graduate students worked full time as teachers at the school and complete course work in the evenings. A rigorous onsite professional development program supplements students' coursework.

Miller et al. (2005) identified elements including a well-articulated rationale for change, the quality of leadership, commitment from staff, sufficient resources and the responsiveness of organisational features that were cultivated through the change process. These elements were promoted as critical to enhancing the effectiveness of teacher training efforts. They were also identified in the work of Fuchs and Fuchs (2001) as strong features in ways to support the use of research in schools. Further, Miller et al. (2005) advocated that attention needed to be given to other variables including collaborative teacher education to ensure the research approach selected is a good *contextual fit*. Interventions should be consistent with teacher's values and beliefs and be unobtrusive, making them more acceptable to both teachers and students.

Winn and Zundans' (2004) 2-year project involving two State Public Schools, in the central west of New South Wales included 40 special education students who were paired and worked with 20 students from local schools twice a week for 2 h each day. The project was designed to enhance literacy development of primary aged children, who were considered to be at risk in regards to their numeracy and literacy development. It was also aimed at developing skills and competencies by the university students majoring in special education with a specific focus on developing their ability to plan and implement a research-based literacy program. Overall, the results indicated that such an exercise, although time-consuming to set up, put into place and monitor, is a worthwhile and valuable experience for university students. It has also enhanced connections between the university and local schools. Limitations included the level of communication time between university students and teachers and linking activities that occurred at school and university.

The need for collaboration between the schools and the university to develop explicit links between research and practice was identified as a key feature of this study. Results indicated that programs between the university and local schools were enhanced when the university students perceived them as valuable. The considerable time required implementing and monitoring collaborative research-based intervention efforts were identified as an obstacle in this preservice RTP reading intervention. These elements are also featured by Cornelissen et al. (2013) in their work in Dutch school and university networks. Although their work specifically focuses on the means of teacher research, they also highlight the need to establish closer integrations of research and practice through teacher research. Their results show that for master's students, the most significant motive for developing, sharing or using knowledge was that the content knowledge about their research topic could be useful to school practice and colleagues.

The TE literature collectively supported the need for RTP factors including the need for sufficient time and the role of support and feedback in the use of research-based practices through efforts to strengthen teacher education programs (Cornelissen et al. 2013; Forlin et al. 2015; Fuchs and Fuchs 2001; Gersten and Vaughn 2007; Griffin and Warden 2006; Hipp et al. 2008; Shallcross et al. 2006; Volonino and Zigmund 2007). Through this TE research, the provision of peer and administrative support with feedback on multiple levels was presented as advantageous for educators to bridge the gap between research and practice (Gersten and Vaughn 1997; Sydoriak and Fields 1997).

Teacher educators share a responsibility for providing educators with a lens through which to view every learner as valued and essential. One way to value learners is by employing the best-researched practices when working with them. Similarly, encouraging TE programs to work collaboratively with educators to address identified needs may promote new knowledge and enhance the success of individual learners (Cornelissen et al. 2013; Klingner et al. 1999, 2004; Vaughn et al. 1998). A joint approach is said to provide coherent, collaborative, research-based and relevant opportunities for practitioners to develop skills that are supportive and foster achievement for all learners (Darling-Hammond 2013; Darling-Hammond and Baratz-Snowden 2007; Golder et al. 2005).

The difficulty in maintaining a collaborative link between university and school partnerships was raised by Sirotnik (as cited in Goodlad 1993, p. 31). Concerns include differing norms, roles and expectations of researchers and practitioners. Sirotnik (as cited in Goodlad 1993) referred to this situation as a 'cultural clash' between universities and schools. TE programs bear heightened responsibility in addressing the longstanding concern that evidence-based knowledge is not being used to its full potential in school settings (Devine and King 2006; Golder et al. 2005; Grima-Farrell et al. 2011; Volonino and Zigmond 2007).

Positive partnerships between schools and universities have been identified. Winn and Zundans' (2004) project identified the need for collaboration between schools and universities to develop links between the theoretical logic and practical decisions. However, the considerable time required to implement and monitor collaborative research-based intervention efforts was identified as an obstacle in this RTP reading intervention (Winn and Zundans 2004).

Golder et al. (2005) reported an initiative designed to enhance the knowledge, skills and attitudes of trainee teachers and to equip them in differentiating their teaching. Evaluation reports indicated individualised teaching partnerships involving a systematic strategy supported by web-based resources were promising (Golder et al. 2005). The need to continue to develop practical ways of enhancing initial teacher education in relation to special educational needs and inclusion were promoted.

The examination of the TE literature identified consistencies with the RTP and PD literature. It built on the initial themes of accessibility, trustworthiness and usability of research describing their importance from a teacher educator rather than a practitioner perspective. Additional factors, identified in the PD literature, including teacher enthusiasm and fatigue and the length of time teachers are involved in learning a new instructional practice, reflect the importance of a collaborative partnerships as well as individual personal attributes and qualities (Barnes 1999; Cornelissen et al. 2013; Darling-Hammond 2013; Forlin et al. 2015; Fuchs and Fuchs 1998; Gersten and Vaughn 2007; Griffin and Warden 2006; Hipp et al. 2008; Korthagen 2004; Shallcross et al. 2006; Titone 2005; Volonino and Zigmond 2007; Winn and Zundans 2004).

Three of the four themes most commonly identified in the RTP and PD literature were also evident in the TE literature. They are an awareness of possible RTP factors including the responsiveness of university education programs in ensuring the practical preparation of teachers, collaboration and support. Collaboration referred to involving practitioners in the research process within the TE context. The need for feedback on multiple levels was also echoed. In a TE context the interpretation of collaboration was extended to include responsive and coherent course structures that contributed to a unified approach. In this context collaboration was cited as critical in developing explicit links between research and practice. This link should assist in aligning differing norms, expectations and roles of researchers and practitioners.

It was suggested that universities have the capacity to create practical pathways between research and practice. In order to achieve this demanding goal, university

education programs must be responsive to the needs of teachers and students (ARACY 2013; Darling-Hammond 2006b, 2013; Gunstone and Northfield 1993). In the TE context, programs should be a good contextual fit. They still need to be valued by students, be research-based and be effective in delivery. They should also provide relevant opportunities and time for practitioners to develop skills that will be helpful in the classroom (Cornelissen et al. 2013; Darling-Hammond 2005). TE that caters for the needs of both teachers and their students through addressing real life concerns are required. Support is the final theme that echoes and expands upon the sub themes identified in previous literatures. In the TE context notions of support addressed teacher enthusiasm and education efforts. If teachers' needs and efforts are not supported they frequently experience fatigue and exhaustion (Gersten and Vaughn 2007; Miller et al. 2005). Acknowledgement of personal qualities and attributes with efforts to strengthen them through supportive and professional programs has been advocated in TE literature.

Given the limited literature that specifically identifies TE, PD or other factors that impact the RTP phenomenon in inclusive education, the review was expanded to look at other efforts that address the way research was established in practice. CSR and CBAM represent such approaches. These initiatives were included in order to investigate RTP elements through direct research examples. The following section presents the CSR and RTP literature as it represented a large-scale effort whose guidelines specifically required the implementation of Research-based practices at scale. It begins with a brief overview of CSR. This is followed by CSR research that yielded knowledge of the RTP factors that may assist in reducing the RTP gap.

2.6 Comprehensive School Reform and RTP

The Comprehensive School Reform Program started in the USA in 1998 to raise student achievement with a specific focus on using research-based effective practices. Efforts to encourage the use of scientifically proven methods and strategies to enable all children, particularly low-achieving children, to meet challenging academic standards may be viewed as a response to the RTP paradigm crisis (ARACY 2013; Bain 2007; European Agency 2014; McLeskey and Waldron 2006; Slavin and Madden 2001). CSR reform initiatives have yielded some project implementation, theoretical, and knowledge of RTP factors given their essential criteria are focused on bringing research-based practice to scale in public education. Of the 12 references that met the identified criteria, 6 offered a sound representation of RTP implementation factors as a result of CSR efforts. Knowledge gained through these studies may guide efforts to directly investigate the RTP gap from a practical perspective are presented in Table 2.1.

The CSR initiative was authorized as a full program in 2002 as part of the No Child Left Behind Act (NCLB). Two major concepts including the mandating of school reform and its comprehensive nature (strengthening all aspects of school

operations including curriculum, instruction, professional development, parental involvement, and school organization) and the use of scientifically based research models (models with evidence of effectiveness in multiple settings) were emphasised. Essentially the CSR program provided funding for schools that addressed the following criteria:

1. Proven methods and strategies which are based on scientifically based research and effective practices and have been replicated in schools with diverse features.
2. Professional development that constitutes high quality and continuous PD and training for staff
3. Comprehensive design with the integration of instruction, assessment, classroom management and PD for effective functioning and aligning these functions into a school-wide reform plan.
4. Support from staff: Including school faculty administrators and staff.
5. Coordination of resources, including the identification of how federal, state, local or private resources can assist schools to coordinate and sustain reform efforts.
6. Evaluation: Arrangement to evaluate reform implementation and student results.
7. External assistance: University or other high quality external assistance from a CSR entity.
8. Parent and community involvement: In planning and implementing school enhancement activities.
9. Measurable goals for student performance including benchmarks for these goals.
10. Scientifically based research to improve the academic achievement of students (added in 2001).

CSR represented America's most ambitious school reform effort with over US\$1.8 billion spread over 6,000 schools (U.S. Department of Education 2004). Knowledge of CSR implementation integrity and data allowed researchers to determine the impact of research-based programs over time and provided guidance for future efforts. Comprehensiveness in this context referred to designs being practical by being complete (Bain 2007). CSR research suggested the need for the presence of feedback systems, well aligned system and school policy goals, evaluation as an emergent function of the implementation process rather than an add on and the provision of adequate professional development and material support.

Similarly in Australia, the Australian government's Department of Education, Employment and Workplace Relations launched the Smarter Schools National Partnerships in conjunction with the states and territories in Australia in 2008 (NSW Department of Education & Training 2009). The program is ongoing. Three Partnerships foci were specified: (i) National Partnership on Low Socio-Economic Status School Communities, (ii) National Partnership on Literacy and Numeracy, and (iii) National Partnership on Quality Teaching. The Australian Government invested approximately \$2.5 billion into the program.

The Smarter Schools National Partnerships engages all school systems, including the non-government sector, to improve educational outcomes for all students, particularly those who are most vulnerable (NSW Department of Education & Training 2009). More than 2,500 primary and secondary schools across Australia are participating in this initiative. These National partnerships represent a significant commitment by the Australian Government to engage in evidence-based practice as a key component of implementing effective educational strategies for long-term impact on student outcomes and school performance (NSW Department of Education & Training 2009). The program highlights the commitment of both the Australian Government and the States and Territories to bridging the research to practice gap as a means of improving outcomes for all students.

Evaluation of the Partnerships commenced in 2011 and is ongoing until 2016. Preliminary analysis guided by the National Partnerships Evaluation Committee (NPEC) in 2011 reported the reforms resulting from the Partnerships were improving: teacher development and practice, leadership capacity, cultural change, monitoring and accountability, and school sector support (NSW Department of Education & Training 2012).

The following summary of the research identified the RTP findings that resulted from the implementation of CSR models in the United States, prior to the program being discontinued by the Federal Government in 2007 (Borman 2009). It is anticipated findings from the evaluation of the Australian National Partnerships will further inform the CSR literature base.

The tension that long existed between Americans' intense faith in education and the slow pace of changes in educational practices was identified by Tyack and Cuban (1995). Previous attempts to improve education have resulted in school reform efforts that rarely match expectations. This was due to the difficulty in changing the daily interactions of teachers and students (Tyack and Cuban 1995). Symptoms of the failure of previous reform efforts stemmed from the inability to intersect content and process. These symptoms were not unlike claims made in the three previous searches about the causes of the RTP gap and included an inadequate comprehension of the time, effort and resources required, a lack of insight about the nature of classroom settings and the provision of PD. Knowledge gained from this fourth round of review did yield additional factors and increased the depth of information that may have contributed to these symptoms. Such knowledge included incomplete design, modest achievement, difficulty in scaling within schools, over reliance on school leadership, under use of technology, limited feedback and a lack of theory (Bain 2007). As a result RTP knowledge has been sought from the outcomes of CSR's goal of making many parts work together as a "self-reinforcing whole" (Bain 2007, p. 21).

The challenging history of school reform and the inability to sustain RTP efforts indicate that the balance between content and process has been difficult to achieve. To accomplish this balance, the challenging intersection between content and process must be firstly identified and then accommodated. Following are examples of CSR efforts that built on knowledge gained from past attempts to achieve the optimal balance between content and process. Through understanding the content and

process required in CSR efforts an effective intersection of key requirements may be achieved to enhance the knowledge of ways to implement and sustain RTP initiatives.

Hurley et al. (2001) conducted a large study that evaluated the achievement outcomes across schools that used Success for All (from 1994 to 1998) by comparing data collected on the internet. Success for All is an example of an extensively evaluated comprehensive school reform reading model that was awarded the highest rating for research quality and outcomes by the Comprehensive School Reform Quality Centre at the American Institutes for Research (CSRQ 2005).

Hurley et al.'s (2001) study investigated the gains made on the Texas Assessment of Academic Skills (TAAS) reading measures for grades 3–5 across 111 schools in the state of Texas. Gains were determined by comparing the percentage of students within schools that passed the TAAS reading measures. The collection of data via the Internet may be considered a limitation, however the analysis of the results identified that gains from the students from the Success for All schools were significantly better than those from the rest of the state. Borman (2009) and Waldron and McLeskey (2010) later supported the authors' claims that the successes of such programs are dependent on the consistent commitment of all teachers and leadership personnel (Hurley et al. 2001; Powers et al. 2010).

Other studies compared Success for All schools results to matched control schools results on individually administered standardized tests such as the Woodcock Reading Mastery Test and the Durrell Analysis of Reading Difficulty. Madden et al. (1993) and Ross et al. (1995, 1997) provided examples of these studies as they followed the progress of students in both Success for All and control schools starting at kindergarten or first grade. These studies were conducted in high-poverty schools within 11 school districts. A total of 6,000 students formed the control group and 6,000 formed the Success For All group. Results from individually administered assessments revealed that reading grade equivalents for Success for All first graders were nearly 3 months higher than the equivalent students from the control group. By the end of fifth grade the difference increased to slightly more than a full grade.

These findings were consistent with the results from a summary of research on the SFA program conducted by the Success For All Foundation in 2006. Collectively they identified positive outcomes in increasing student reading (Slavin et al. 2006). Given that educators were increasingly being asked to use research-based programs (and still are), the lessons learnt from the practical implementation of SFA may yield knowledge of factors that support the translation of other research-based programs to practice.

Slavin's (2004) paper titled 'Translating research into widespread practice: The case of Success for All (SFA)' summarized implementation considerations as a result of collective SFA experiences in an attempt to guide the effective implementation of other research-based programs (RBP). Assertions that broad scale implementation of RBP can occur if well developed student materials, teacher manuals, assessment, training, follow up and implementation assessments were evident. Slavin (2004) maintained that if teachers were taught the principles of good practice and asked to apply them to their own materials and instruction, it would not be dif-

difficult to maintain consistent high quality implementations. Given that CSR is only as effective as its implementation (Kurki et al. 2006), strong teacher buy in is required across schools in favour of the program adoption if it is to be implemented successfully. Resources including time and professional development plus a rapid roll out of the main program elements were said to be required for teachers to see improvements in programs implementations (Slavin 2004).

Borman et al. (2002) independent Meta analysis of ‘whole-school’ or ‘comprehensive’ reforms identified that the combined quantity, quality, and statistical significance of evidence set SFA apart from the rest. Analysis of data highlighted that schools implementing CSR models for 5 years or more showed particularly strong effects, indicating that a long-term commitment to validated research is required to establish comprehensive school reform. The components attributed to the success of the reform included; the need for ongoing staff development and training to enhance comprehension of the program details and implementation concerns; the need for clear evidence of school-based support with the authors suggesting a 75 % approval before the reform can be adopted; replicable student performance assessment methods and benchmarks that the school can use to track student progress. Although this meta analysis focuses on CSR it provides valuable information that link RTP to CSR initiatives as CSR stipulates the use of only validated research projects (Powers et al. 2010).

Direct Instruction (DI) was another comprehensive school reform model, which consisted of carefully scripted lessons, backed by texts and workbooks. In a fact sheet presented by The Baltimore Curriculum Project, DI was denoted as being a remarkable success in assisting children with reading, writing and maths since 1996. Claims that the DI model offered a comprehensive approach to school reform, which included professional development, measurable weekly goals, staff support, and evaluation and coordination of resources emerged. Mac Iver et al. (2003) identified these assertions in a 4-year study examining the implementation of the Baltimore Curriculum Project (BCP) in six Baltimore City public schools. BCP used a combination of DI and core knowledge as its reform curriculum. Each school was demographically matched with a similar, within-district school. Two cohorts of students were followed throughout the 4 years (students who were in either kindergarten or grade 2 during 1996–1997). Interviews with principals and DI coordinators and focus groups with teachers were conducted each year to gauge staff perceptions of the innovation. In the first 3 years, classroom observations were made in BCP schools. DI curriculum and instructional methods were implemented in BCP schools, though implementation did not proceed at the desired rate. Implementation of core knowledge was not envisioned to begin until year 3 then proceeded more slowly than the DI implementation. A lack of access to research-based data about other interventions was presented as a limitation of the study indicative of the need for participants in RTP efforts to be well-informed.

The experiences of this longitudinal research raised issues about the transfer of RTP as achievement tests data indicated mixed results for students, depending on subject, grade level, and school. Results were most positive for mathematics computation with students moving from the 16th percentile at the end of grade 1 to the

46th percentile by the end of grade 3. This was compared to growth from the control group moving from the 27th to the 36th percentile over the same period. DI students made the most significant improvements in mathematics computation and reading. The effectiveness of the continuous structure and logical progression of the research-based program with the need for ongoing PD to implement the program with integrity were issues raised. The ability to regularly identify student progress using research-based approach was identified as a strength, yet frustrations about the robotic nature of the program and lack of flexibility were identified through focus groups. In brief, staff preferences and the needs of the students within specific settings were identified as priorities in the implementation of DI in the Baltimore Curriculum Project. As DI is an example of a CSR initiative that specifies the use of research-based projects the knowledge identified as a result of the Baltimore Curriculum Project contributes to forging additional links between CSR and RTP.

Appelbaum and Schwartzbeck (2002) questioned CSR programs' evidence of effectiveness and the evaluations' degree of rigor in a report that presented the outcomes of a meeting of CSR researchers on how CSR should be evaluated. The discussion focussed on the goals of CSR and definitions of "success". Methods of measuring success in a CSR context and the critical role of the district in the success of reform were also presented. Recommendations included developing common measures of achievement and implementation to ensure consistency and the need for a mutually agreed upon definition of 'significant' student progress. The importance of developing universal standards for good implementation was prioritised. As CSR is based on the implementation of research-based practices, these recommendations may guide student achievement using research-based projects.

Bain and Hess' (2001) study sought to establish whether changes in faculty members' perceptions of their work environment compared with the implementation of the School Design Model (SDM) program. Stakeholders' perceptions of their contribution to students, collegial support, and autonomy in a secondary school were examined over 4 years from 1993 to 1997. The first administration occurred during a pilot phase of the SDM when the school's traditional independent school program and a pilot of the SDM program were both in operation. The second administration occurred 2 years later during the full implementation of the program, and the third during the continuation phase after an additional 2 years. Results indicated higher overall scores for faculty perceptions of culture in the SDM program over teachers in the traditional program. These improvements remained stable in both the implementation and continuation phases of the program. Comparison with a benchmark study of over 40 schools revealed that despite the comprehensive reform of the work environment, faculty remained positive toward their contribution to students and felt more reinforced by peers. Although this study only represented one case it provided valuable knowledge about RTP considerations. The interpretation of results noted the benefits of a collaborative approach in providing the faculty with collaborative problem solving and instructional decision making skills. Teachers indicated that having a sense that their efforts were making a difference was essential irrespective of the RTP program selected or their paradigm approach. This work links CSR and RTP as a need for a complete framework for implementation includ-

ing methods, design, tools and strategies was presented as being beneficial to both initiatives.

More recently comprehensive school reform design efforts have built on this knowledge and identified potential targets that contribute to making research responsive to the needs of staff and students. Bain's (2007) longitudinal Self Organizing School (SOS) case study span across a decade and took place at the Brewster Academy, a private secondary setting catering for 350, grade 9–13 students. The project employed the School Design Model (SDM) as a strategic methodology to build a new program responding to commonly identified issues that have emerged from RTP literature. Limitations of this study included the inability to assign children to conditions and the normal faculty turn over within an 8 year period. The study employed a theory-based approach to the challenges of site-based reform and identified a number of implementation and RTP factors relating to the content and process of CSR. Knowledge of these factors were identified during the change process and included nine targets which represent critical areas of need and potential goals of next generation comprehensive school reform design (Bain 2007).

The nine targets are presented individually as they reflect knowledge gained from SFA, DI and other CSR efforts. They include educational power, comprehensiveness, emergent feedback, systemic technology, professional lives, school level design for school level influence, effective adoption, implementation integrity and theory (Bain 2007). These targets collectively summarize assertions identified through research and commentary pieces as they present an approach that deepens the comprehension of the challenges and future opportunities associated with intersecting RTP content and process.

Educational Power is a target that assisted in making the migration from RTP by suggesting that in the first instance an approach needs to have the research-based capacity to bridge the gap. It referred to the research effect size as minimal when measured against effort, time and money expended and suggested that research-based practice must be leveraged in sustainable ways to magnify the desired effects. In brief educators need to be sure that research has 'power' before applying it. The second related target theory pertains to the need for a complete framework. The implications of the use of theory in the responsiveness of research category are that this target could identify and address the issues that get in the way of RTP. Theory and educational power represent targets that can be linked to give research the framework and leverage to directly respond to the needs of individual settings.

Emergent feedback, effective adoption and school level design for school level influence, support and deepen administrative backing and supportive environment factors knowledge. Emergent feedback has proven to be beneficial as a feature of the program design as it allows the monitoring and management of implementation through responsive, timely and relevant feedback. Through the use of school level design, interventions that address school level factors can be scaled beyond single classrooms. School leadership may be a key factor connecting content, implementation of design with people, processes and systems. The term 'Professional lives' described initial teacher enthusiasm and can be linked with TE efforts to raise awareness of how this passion can readily turn to fatigue and disappointment.

Professional lives also referred to how teachers' jobs are defined, recognized and rewarded. The acknowledgment of these dimensions and concerns related to the status and expectations of educators can assist in the planning and practical application of RTP efforts.

Collectively these factors combined to create a strong case for their use in a RTP investigation, which aimed to validate elements that contribute to the well-documented RTP gap. As a goal of comprehensive school reform is to make the many parts work together, knowledge of these targets may assist in raising an awareness of elements that go beyond these usual RTP factors.

In sum, CSR efforts have consolidated and expanded on previous literatures to identify themes that echo and expand upon previous commentary and research. These themes include scalability and educational power, comprehensiveness and supportive environments and structures. Scalability and educational power identified the need for teacher training and use of scientific research. It suggested that research should be validated and have scalability potential prior to application. Elements of Bain's (2007) school level design for school level influence target fell into this theme, as knowledge of the practical elements must be considered in order to scale projects. The second theme is titled comprehensiveness. In order to make projects comprehensive, previously identified collaboration themes are essential. The CSR literature expanded on this highlighting the need for a complete research to practice framework. Knowledge of the intersection of content and process could assist schools in working together as a self-reinforcing whole. Comprehensiveness also referred to the project being comprehensive by design, by being adequate and complete. The third theme, supportive environments and structures expand upon previous notions of support. This was done through the introduction of calls for the use of systemic technology and well-aligned system and policy goals. This theme also incorporated parent and community involvement in supporting school activities. The use of evaluation as an emergent function rather than an-add on may also support planning and implementation efforts.

The final section introduces the Concerns Based Adoption Model (CBAM) as it represents a prolific longstanding model related to adopting change. This model is presented as a final component of this literature review as changed approaches are required from both researchers and educators as they strive to bridge the RTP gap. Increased knowledge of stages of concerns associated with change may raise awareness of both personal and environmental features and assist in preparing and accommodating future RTP efforts. The following section provides a brief overview of CBAM and presents the related knowledge asserted in literature that may assist educators and researchers in addressing the RTP gap.

2.7 Concerns Based Adoption Model (CBAM) and RTP

The Concerns-Based Adoption Model is a framework that was developed at the University of Texas and has implications for practice as it raises an awareness of the factors involved with a change process (Hall and Hord 1987; Hord et al. 1987; Loucks-Horsley and Stiegelbauer 1991). The basis of this model can provide a diverse lens into a deeper awareness of ways RTP transition can be enhanced through the increased knowledge of how to support change.

The CBAM model presented below identifies the primary concerns of individuals in the process of change. This knowledge is beneficial as it purports to anticipate people's concerns in order to enable innovators to focus on appropriate forms of support. This work also reassures innovators that it is possible to anticipate much that will occur during a change process. The primary concerns of individuals in the process of change are identified in the following seven stages as described by Horsley and Loucks-Horsley (1998).

2.7.1 *Stages of Concern*

1. Awareness. At this stage, individuals are not concerned about the innovation.
2. Information. Individuals would like to know more about the innovation before they adopt the change and undertake new practices.
3. Personal. People at this stage are beginning to think about how the change will affect them.
4. Management. Concerns about how to make the change work characterize this stage.
5. Consequence. Individuals are beginning to make the new practices their own and now are concerned about how the change is affecting students.
6. Collaboration. People at this stage are trying to connect their work to what others are doing.
7. Refocusing. Individuals now have integrated the practices into their professional lives and are examining ways to improve these practices.

More than three decades ago Hord et al. (1987) grouped the seven stages into three main concerns. The first 2 stages can be seen as concern for self: I am not concerned about the innovation; I would like to know more about it; how will using it affect me? Stage 3 is a task orientated concern: I seem to be spending all my time getting materials ready; keeping track of progress is difficult; I am still not sure how to do this. Stages 4–6 are concern for impact: I am looking at the effects of the innovation on my students; I am concerned about relating what I am doing with what other instructors are doing; I have some ideas about something that would work even better.

Horsley and Loucks-Horsley's (1998) commentary article added clarity to the CBAM framework. They suggested that when most educators think of change they

think of a new program or practice. Horsley and Loucks-Horsley (1998) proposed that programs do not represent change, they are examples of the content of change. CBAM identified the parallel between the natural and developmental process individuals go through when they engage in something new or different.

CBAM examines this process in three distinct ways:

1. Stages of Concern (introduced above).
2. Levels of Use.
3. Innovation Components.

2.7.2 Levels of Use

Levels of use described the behavioural dimension of change. This referred to what teachers do in the classroom when making the transition from teaching one way to teaching differently. There are three Levels of Use that define nonusers of a program. According to Horsley and Loucks-Horsley (1998) they include:

Level 0, Non-use. Refers to no action being taken with regard to the program or practice;

Level I, Orientation. Refers to a person seeking information about the program or practice;

Level II, Preparation. Identifies that a decision has been made to adopt the new practice, and the person is actively preparing to implement it.

CBAM also reveals five distinct Levels of Use among users:

Level III, Mechanical. Reflects early attempts to use new strategies, techniques and materials.

Level IVa, Routine. The establishment of a satisfactory pattern of behaviours.

Level IVb, Refinement. Refers to when people feel comfortable and go beyond the routine and assess the impact of their efforts and making changes to increase that impact.

Level V, Integration. When people are actively coordinating with others to use the innovation.

Level VI, Renewal. The final level where people seek more effective alternatives to the established use of the innovation.

2.7.3 Innovation Components

Innovation Components or Configurations referred to the importance of recognizing the specific parts of a change. They provided staff developers with tools called 'Practice Profiles'. 'Practice Profiles' required an innovation to be formally defined

with a description of the resources and conditions necessary to implement them with critical program components.

This description of the three aspects of CBAM have been introduced and described due to the knowledge it presented on the crucial phases of the change process. The knowledge gained through the investigation of CBAM have been considered in the search of factors that contributed to the sustainment of research-based applications as they have successfully united efforts by teachers, curriculum developers, staff developers, school administrators, principals, evaluators and researchers (Pratt 1982). This information yielded knowledge of factors that may contribute to the transition of RTP, particularly in the early implementation phases.

A concise overview of the basic assumptions, which outlined the improvement process of CBAM, were presented in an early case study example conducted by Pratt et al. (1982). This study demonstrated the collaborative efforts of multiple agenda and agencies. Participants included staff from three different agencies across America. These agencies included the staff developers at Jefferson County, Colorado, staff developers at Beach County Schools Florida and a team of researchers at the Research and Development Centre at the University of Texas. Qualitative and quantitative data was collected over 4 years and emphasis was placed on analysing what occurred at individual teacher and classroom level when innovations were introduced. The results of the project were not what the innovation developers had originally intended. By the end of the third year of implementation, two-thirds of the teachers had already moved to a routine level of use. As emphasis of this study was on analyzing changes in individual teachers, the knowledge gained assists in uniting CBAM and RTP as it enhances the understanding of changes in teachers when implementing research-based innovations.

Claims that change is a process not an event were identified in research by Fullan (1993), Hall (1980), Horsley and Loucks-Horsley (1998), and Pratt (1982). Results indicated that change could not simply be viewed in terms of larger organisational factors. Change (or RTP endeavours) must be viewed from the perspective of the many individuals who participate in it. Teachers, administrators and others, experienced efforts to improve school projects individually as well as collectively. This implied that individual members of a community must be considered when change is expected. Through using the knowledge outlined in Pratt et al.'s (1982) planning, implementation, and evaluation of two CBAM case studies, a deeper comprehension of factors that could expand upon RTP knowledge was identified.

The authors investigated the use of CBAM to address teachers concerns demonstrated through Jefferson County Colorado Schools program (to improve elementary science curriculum and instruction) and the Palm Beach Florida Schools Development and Implementation of the Unified Curriculum program. This research emphasized the important role of training and collaborative efforts. The authors suggested that staff and principals do not benefit from 1 or 2-day workshops and that principals do affect teacher's implementation and use of new programs. Key change principles were presented at the conclusion of this research. They included the need to develop as much clarity and consideration about the operational components of the innovation prior to implementation. When all stakeholders have input

into expectations and a common understanding about the implementation greater comprehension can result. Professional development should occur over time to address participants concerns. Finally an advance plan of the overall design of any intervention is critical. This principle allowed for increased continuity and support as provisions for staff meetings, newsletters and day-to-day occurrences can be planned for and closely interrelated to complement each other.

Rutherford's (1982) study examined whether principals have similar stages of concern about their change facilitator role, and, if they have concerns about the shift as the change process unfolds. Five short case studies were presented to illustrate how the Stages of Concern looked and shifted during the period of the study. Interviews were conducted with five principals at different settings and case study notes were collected. A limitation included lack of verification of tentative data on the relationship between the principals' experience and identified concerns. The author noted that if this data had been verified it would have had important implications for the staff development of change facilitators. Results indicated that while change facilitators' concerns are different in content from those of teachers, the overall concern seemed to be the same. This study emphasized the role of teachers in RTP efforts as major contributors to facilitating change in schools. This impacted on the role of the principal, as a top down approach may be detrimental to the transition of RTP. Another implication was that effective PD or TE should consider the needs and concerns of individuals. These concerns did change at different points in time and RTP efforts that cater for these changes through training and resources may be more effective.

Rutherford's (1986) paper reflected on his 15 years of research that identified how teachers responded to attempts to implement educational innovations. Details on how this information was accumulated and synthesized were not provided however a summary presented insights on how teachers' beliefs could impact upon the transition of RTP. The author claimed that in many cases, teachers believe their future in relation to the innovation is determined not by them, but by their superiors. Other teacher responses indicated that change would soon fade away just as other fads have done so. Some teachers gave the impression that they were using an innovation when, in fact, they were not. According to Rutherford (1986) researchers have concluded that teachers are most often the recipients rather than the initiators of any change affecting their classrooms and are therefore resistant to innovations. Although it is essential that teachers be receptive to change (Fullan 2003), developing universal teacher ownership of the change is difficult. The Concerns-Based Adoption Model provided a systemic plan for facilitating change that gave teachers priorities some consideration. Rutherford's (1986) report raised awareness of teacher perceptions and strengthened the importance of shared ownership between researcher and educators when implementing research-based practices.

Miles and Huberman (1994) CBAM validity study combined quantitative data from 146 school districts with case studies from 12 sites to examine the process of innovation in schools. A spectrum of contexts ranging from maths, counselling, reading to environmental and social sciences were investigated. Phases of the implementation framework included ways to identify the adoption, early implemen-

tation and later implementation phases of innovation were employed to analyse the feelings and concerns of the teachers from 12 sites. Results of this study identified that projects must address the stakeholders' needs, feelings and perceptions prior to addressing program orientated concerns. This need for programs to firstly address individual or self-orientated concerns or task orientated concerns, prior to practice, implied that to implement change stakeholders themselves must change first (Miles and Huberman 1994). Concerns regarding efficient management, collaboration, refocussing and student consequences were said to occur during the later stages of implementation. Miles and Huberman (1994) efforts supported the CBAM shift in concerns from self to practice or task-orientated concerns. They also proposed that programs need different types of nourishment to mature. Attention should be given to stakeholders' needs, feelings and perceptions prior to addressing program-orientated concerns. This study suggested that for research to be translated to practice, factors that attend to those personal concerns must be addressed initially. RTP initiatives may then move into more mature stages where they build on initial experiences in which task orientated concerns become a priority.

Horsley and Loucks-Horsley (1998) added to the knowledge generated about CBAM and introduced additional key themes embodied in the model. Their article described ways CBAM can be used when developing and evaluating staff training efforts. The first three stages of the CBAM model have implications for teacher education in a RTP context. The first stage involved attending to where people are situated cognitively and emotionally and addressing their concerns. Secondly, the allocation of realistic time frames with responsive assistance was determined to be critical to the implementation of new interventions. Finally, they indicated that all too often new innovations for teachers, often grafted on top of regular expectations, placed increased and unrealistic demands on teachers. The identification of such elements through CBAM research raised awareness of possible factors beneficial to the progression of reform efforts. This work expanded RTP knowledge beyond the usual claims made through intervention research.

The three components of the CBAM system helps to identify an awareness of participant needs prior to moving into a middle management driven stage of change that focused on task mastery. The final stages of concern related to the impact of an activity and its outcomes. This knowledge broadened claims that research must respond to the needs of individuals and drew attention to their specific needs for information, assistance and support (Bybee 2005). Through work on the CBAM stages of concern, educators and researchers gained an increased awareness of a research-based developmental process, which could guide implementation and sustainment efforts (Hall and Hord 2015; Sweeny 2003).

Davidson's (2010) action research study using mixed methods employed the CBAM's stages of concern continuum to determine if PD altered the concerns of junior high teachers toward inclusion. Training occurred over 4 months and was focused on inclusion and incorporated information on building communities, developing strategies for collaboration, equity, accommodations to student learning and the change process. Results indicated that teachers were concerned about managing tasks while overcoming barriers to inclusion. Teachers were also anxious about the

impact that the use of inclusive practice had on them and their students. This study provided a recent insight on the factors to be considered when employing PD to establish inclusive communities of practice.

The CBAM literature expanded upon three themes identified in this review. The first theme identified the work of Horsley and Loucks-Horsley (1998) and recognised that change is a process, not an event. It implied that PD should occur over time and be dynamic in addressing participants changing needs. Through raising awareness of the developmental process required for change, a recognition of support structures followed. The second theme, support through change, identified that comprehensive change is a highly personal experience involving developmental growth in feelings as well as and skills and knowledge, requiring sustained assistance. This assistance and the related time requirements will need to change as shaped by the changing needs of the stakeholders. The final theme, collaboration once again echoed the previous sub themes. In the CBAM literature the notion of collaboration was expanded to include shared ownership of workloads, decisions and other elements involved in and resulting from change processes. Collaborative efforts may change to address the changing needs of stakeholders and their environments.

The practical knowledge gained from CBAM and CSR projects such as Slavin's (2004) *Success for All* and Bain's (2007) *Self Organizing School* efforts provided an insight into the challenges associated with merging content and process. When viewed collectively they provide a more comprehensive view than prior curriculum or intervention based initiatives showing RTP in the broader life of a school and highlighting related issues. The knowledge of the RTP factors gained through intervention research were linked with CBAM and CSR efforts to gain a more comprehensive perspective of ways to enhance the practical implementation of research innovations. Table 2.1 presents that major themes identified through RTP, PD, TE, CSR and CBAM literature. The major themes identified in each of the literature summaries are collated through the outlined bodies of literature and have been presented along with the authors who presented the specific factors in Table 2.1.

2.8 Summary of the RTP Literature

While the discussion of RTP was extensive, there were few empirical studies that specifically focused on the translation of research into inclusive education settings. This review integrated the larger RTP commentary and opinion literature with a small number of related RTP research studies. It further investigated PD, TE, CSR and CBAM literature that informed RTP efforts to gain a deeper comprehension of the factors identified as essential to reducing the RTP gap as asserted by researchers. Major themes were presented as ways to assist researchers and practitioners in reducing the RTP gap and are presented in Table 2.1. These include the responsiveness of research, collaboration and support. This table highlighted the consistencies

and expansion of asserted RTP factors from five bodies of literature across these identified themes.

Overall, the research articles support the major themes identified in opinion papers and reflective essays. The initial RTP comments by Carnine (1997) and others including the importance of teacher contribution, trustworthiness, usability, accessibility of educational research and the need for consistent research findings are supported and expanded upon in later literature (ARACY 2013; Breslin and Buchanan 2008; Capizzi and Fuchs 2005; Danforth and Naraian 2015; Davidson 2010; De Landsheere et al. 1981; Earles-Vollrath 2012; Foegen et al. 2001; Forlin et al. 2015; Fuchs and Fuchs 1998; Grima-Farrell 2014; Grima-Farrell et al. 2011; Horsley and Loucks-Horsley 1998; Malone 1984; Malouf and Schiller 1995; Miller et al. 2005; Miretzky 2007).

Intervention research raised an awareness of the need to be responsive to organizational demands; the need to display tolerance for initial implementation difficulties and the importance of recognizing accomplishments and encouraging feedback on multiple levels (Grima-Farrell et al. 2011; Hargreaves 2007; Hasbrouck et al. 1999; Miller et al. 2005). Beyond these commonly identified RTP factors, the broader search conducted linked accumulated RTP knowledge to the totality of school based RTP efforts.

Researchers have sought to establish long-term collaborative partnerships with schools as a way to facilitate change and enhance sustainability. Such partnerships have promoted deeper involvement from teachers and included some form of ongoing support from the project implementation team after the initial instruction in research-based practices had taken place. This work coincides with an increasing recognition of the capacity of teacher education as a locus for addressing the RTP gap. It calls for additional investigation utilising specific RTP cases that share a common teacher education experience and address the diversity of student needs (Blanton et al. 1997; Darling-Hammond 2005; Gravani 2008; Winn and Zundans 2004; Department of Education and Training (Australia) 2015). Collectively, researchers have described models used to involve school practitioners in the development, implementation and maintenance of empirically validated interventions.

Some teachers have effectively implemented and sustained research-based instructional practices over time whereas others have not implemented the practices at all. Most studies that have contributed to this collective RTP knowledge are of a brief duration; for example the NRP (2000) found few studies where implementation of the research into practice went beyond a single year. This was evident even when high levels of support were provided (El-Dinary et al. 1994). This suggested that personal qualities and attributes of teachers might also need to be considered in establishing effective graduate experiences. These variables may impact upon research project implementation and sustainment success, as one's ability to be innovative and differentially engage in a professional capacity with research-based projects over a length of time may be a factor worth investigating further.

Nuthall's (2004) explanatory theory that links research and teaching assertions provides continuous, detailed data on individual experiences, analyses changes, skills, beliefs and identifies and responds to real time interactive relationships. This

purported the need to investigate whether the factors and features of a teacher education course are replicated in respective school based settings.

The consistencies in the teacher education RTP literature indicated that research alone could only provide a road map to practice. Suggestions that attention should be given to organizational issues so that research-based practices can be sustained over time warrant additional investigation (Bain 2007; Miller et al. 2005). For the RTP gap to be reduced a need exists to incorporate empirically derived educational practices into the instructional repertoire of educators (ARACY 2013; Foegan et al. 2001; Grima-Farrell et al. 2011; Hattie 2009; Kutash et al. 2009), as teacher knowledge and context are important to conceptualizing the relationship between research and practice.

Although significant challenges do exist, the collection of RTP literature highlights that well designed teacher education programs, which are collaborative, coherent and provide support and feedback on multiple levels, can positively enhance research efforts in practical applications (Darling-Hammond 2006b; Francis 2002). These assertions reflect a need for additional investigation through collaborative university and school partnerships, as reducing the RTP gap is said to be possible, when educators are informed and actively involved in the process (Foreman and Arthur-Kelly 2014; Grima-Farrell 2014; Korthagen 2004).

Darling-Hammond (2005) suggested that teacher effectiveness is strongly linked to the preparation teachers receive. Therefore if schools and universities are collaboratively involved in examining factors that contribute to the RTP gap, identified barriers may be overcome. This coincides with an increasing recognition of the capacity of teacher education as a locus for addressing the RTP gap and calls for additional investigation utilizing specific RTP practice cases which share a common inclusive teacher education experience (Department of Education and Training (Australia) 2015; Darling-Hammond 2005, 2013; Gravani 2008; Grima-Farrell 2015; Winn and Zundans 2004).

CSR provided a deeper insight and additional awareness of the RTP context, the elements and factors required to implement and sustain reform efforts. This increased knowledge about the practical capacity of such complex reform initiatives provided research-based information on ways reform efforts contribute to making research more responsive (Aladjem et al. 2006; Bain 2007; Bain and Hess 2001; Hall and Hord 2015; McLeskey and Waldron 2006; Slavin and Madden 2001). CSR efforts specifically identified a diverse range of elements that contributed either directly or indirectly to the factors that were suggested to influence RTP.

Hord et al. (1987) suggestion that “one of the most common and serious mistakes made by ...leaders of a change process is to presume that once an innovation has been introduced and initial training has been completed the intended users (teachers) will put the innovation into practice” (1987, p. v). Klingner et al. (2003) supported this concern through their concept that sustaining a project is a process, not an event. Researchers sought to establish long-term collaborative partnerships with schools as a way to facilitate change and enhance sustainability. These partnerships have promoted deeper involvement from teachers and included some form of ongo-

ing support from the project implementation team after the initial instruction in research-based practices has taken place.

Hence, teacher education was a key factor in this study as each of the coordinators of the RTP projects under investigation shared the same graduate preparation program. Given that teacher education was a unifying factor across all six cases, it represented a key focus and created a central avenue for the investigation. This review of the literature is a pivotal part of the methodology of this work as it was foundational to the data collection tools described in Chap. 3. In essence, additional research to practice knowledge was collected using instruments that were guided by this exploration of factors that were synthesized from literature generated over the last 40 years within and across related key RTP areas (Table 2.1).

Key Points

This review of the literature highlighted that:

- Although so much has been articulated about the research to practice gap in education and other domains, there was very little empirical evidence to support the commentary claims asserted. Given that much of the RTP literature was commentary based and focussed on problem analysis and proposed solutions, the literature search was expanded to four additional areas in pursuit of empirical evidence. It went beyond initial expectations and investigated PD, TE, CSR and CBAM literature that informed RTP efforts.
- Much discussion of RTP occurred (particularly in the late 1990s) yet few empirical studies that specifically focused on the translation of research into inclusive education settings existed.
- This chapter integrated the significant commentary and opinion literature with a small number of related research studies in an attempted to validate RTP factor claims and investigate possible practical pathways that would assist researchers or educators in narrowing the RTP gap.
- The responsiveness of research, collaboration and support were the major themes presented as ways to assist researchers and practitioners in reducing the RTP gap. The consistencies and expansion of these themes and asserted RTP factors from the five bodies of literature investigated are presented in Table 2.1.
- On analysis of the five bodies of literature, the research articles supported the major themes identified in opinion papers and reflective essays. The intervention research raised an awareness of the need to be responsive to organizational demands; the need to display tolerance for initial implementation difficulties and the importance of recognizing accomplishments and encouraging feedback on multiple levels.
- Consistencies in the teacher education RTP literature indicated that research alone could only provide a road map to practice. Reducing the RTP gap is said to be possible, when educators are informed and actively involved in the process.
- Teacher effectiveness is strongly linked to the preparation teachers receive. Therefore if schools and universities are collaboratively involved in examining factors that contribute to the RTP gap, identified barriers may be overcome.

- CSR provided a deeper insight and an additional awareness of the RTP context, the elements and factors required to implement and sustain reform efforts. This movement promoted deeper involvement from teachers in the research process and served to enhance the global knowledge on the need for a collaborative approach to reducing the RTP gap.
- The collective knowledge gained through the analysis of the RTP themes and factors, across the five areas of literature investigated, formed the foundation of the data collection tools employed in this study. This approach builds on the wealth of previous knowledge to move forward in aligning the shared research AND practice goal of enhancing student outcomes and success through the sustained implementation of research based practices.

References

- Act, N. C. L. B. (2001). No child left behind. nochildleftbehind.gov
- Aladjem, D. K., LeFloch, K. C., Zhang, Y., Kurki, A., Boyle, A., Taylor, J. E., et al. (2006). *Models matter – the final report of the national longitudinal evaluation of comprehensive school reform*. Washington, DC: American Institutes for Research.
- Appelbaum, D., & Schwartzbeck, T. D. (2002). *Defining, measuring and supporting success: Meeting the challenges of comprehensive school reform research*. Washington, DC: The National Clearinghouse for Comprehensive School Reform.
- Australian Research Alliance for Children & Youth. (2013). *Inclusive education for students with disability: A review of the best evidence in relation to theory and practice*. Available at http://www.aracy.org.au/publications-resources/command/download_file/id/246/filename/Inclusive_education_for_students_with_disability_-_A_review_of_the_best_evidence_in_relation_to_theory_and_practice.pdf
- Ax, J., Ponte, P., & Brouwer, N. (2008). Action research in initial teacher education: An explorative study. *Educational Action Research*, 16(1), 55–72. doi:10.1080/09650790701833105.
- Bain, A. (2007). *The self-organizing school: Next generation comprehensive school reforms*. Lanham: Rowman & Littlefield Education.
- Bain, A., & Hess, P. T. (2001). *School reform and faculty culture: A longitudinal case study*. New Hampshire: Brewster Academy.
- Barnes, M. K. (1999). Strategies for collaboration: A collaborative teaching partnership for an inclusion classroom. *Reading and Writing Quarterly: Overcoming Learning Difficulties*, 15(3), 233–238.
- Bereiter, C. (2002). *Education and mind in the knowledge age*. Mahwah: Lawrence Erlbaum Associates.
- Billups, L. H., Kornblet, A., Morrissey, P. A., Mitchell, S. M., Sydoriak, D., & Fields, M. (1997). Response to bridging the research-to-practice gap. *Exceptional Children*, 63(4), 533–534.
- Black-Hawkins, K., & Florian, L. (2012). Classroom teachers' craft knowledge of their inclusive practice. *Teachers and Teaching*, 18(5), 567–584. doi:10.1080/13540602.2012.709732.
- Blanton, L. P., Griffin, C. C., Winn, J. A., & Pugach, M. C. (Eds.). (1997). *Teacher education in transition: Collaborative programs to prepare general and special educators*. Denver: Love.
- Bogdan, R. C., & Biklen, S. K. (1982). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn and Bacon.
- Borg, S. (Ed.). (2015). *Professional development for English language teachers: Perspectives from higher education in Turkey*. Ankara: British Council. Available at <http://tinyurl.com/l49lfgw>
- Borman, G. D. (2009). The use of randomized trials to inform education policy. In G. Sykes, B. Schneider, & D. N. Plank (Eds.), *Handbook of education policy research* (pp. 129–138). New York: Routledge.

- Borman, G. D., Hewes, G. M., Overman, L. T., & Brown, S. (2002). *Comprehensive school reform and student achievement: A meta-analysis*. Baltimore: Center for Research on the Education of Students Placed At Risk.
- Bradley, B. A., & Reinking, D. (2011). Enhancing research and practice in early childhood through formative and design experiments. *Early Child Development and Care*, 181(3), 305–319.
- Breslin, M., & Buchanan, R. (2008). On the case study method of research and teaching in design. *Design Issues*, 24(1), 36–40. doi:10.1162/desi.2008.24.1.36.
- Burns, M. K., & Ysseldyke, J. E. (2009). Reported prevalence of evidence-based instructional practices in special education. *Journal of Special Education*, 43, 3–11. doi:10.1177/002-2466908315563.
- Bybee, J. (2005). Language change and universals. In R. Mairal & J. Gil (Eds.), *Linguistic universals*. Cambridge: Cambridge University Press.
- Capizzi, A. M., & Fuchs, L. S. (2005). Effects of curriculum-based measurement with and without diagnostic feedback on teacher planning. *Remedial & Special Education*, 26(3), 159–174. doi:10.1177/07419325050260030401.
- Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children*, 63(4), 513.
- Cochran-Smith. (2001). Constructing outcomes in teacher education: Policy, practice and pitfalls. *Education Policy Analysis Archives*, 9(11), 1–40.
- Coleman, P. (1979). *Teaching, a profession for amateurs? Building research/practice linkages via informal field-based training activities for teachers*. Paper presented at the Canadian Education Association/Canadian Educational Research Association Conference. Retrieved 22 May 2009, from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED180956&site=ehost-live>
- Comprehensive School Reform Quality Centre. (2005). *CSRQ Centre report on elementary school comprehensive school reform models*. Washington, DC: American Institutes for Research.
- Cornelissen, F., van Swet, J., Beijgaard, D., & Bergen, T. (2013). Exploring knowledge processes based on teacher research in a school–university research network of a master’s program. *Journal of Educational Change*, 14(2), 139–176.
- Danforth, S., & Naraian, S. (2015). This new field of inclusive education: Beginning a dialogue on conceptual foundations. *Intellectual and Developmental Disabilities*, 53(1), 70–85.
- Darling-Hammond, L. (Ed.). (1994). *Professional development schools: Schools for developing a profession*. New York: Teachers College Press.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1). Retrieved from <http://epaa.asu.edu/ojs/article/view/392/515>
- Darling-Hammond, L. (2005). Prepping our teachers for teaching as a profession. *Education Digest*, 71(4), 22–27.
- Darling-Hammond, L. (2006a). Assessing teacher education the usefulness of multiple measures for assessing program outcomes. *Journal of Teacher Education*, 57(2), 120–138. doi:10.1177/0022487105283796.
- Darling-Hammond, L. (2006b). Securing the right to learn: Policy and practice for powerful teaching and learning. *Educational Researcher*, 35(7), 13–24. doi:10.3102/0013189X035007013.
- Darling-Hammond, L. (2011). *The flat world and education: How America’s commitment to equity will determine our future*. Moorabbin: Hawker Brownlow Education.
- Darling-Hammond, L. (2013). *Developing and sustaining a high-quality teaching force*, Report Prepared for the Global Cities Education Network, Asia Society.
- Darling-Hammond, L., & Baratz-Snowden, J. (2007). A good teacher in every classroom: Preparing the highly qualified teachers our children deserve. *Educational Horizons*, 85(2), 111–132.
- Darling-Hammond, L., & McLaughlin, M. W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan*, 76(8), 597–604.
- Davidson, K. (2010). The integration of cognitive and sociocultural theories of literacy development for instruction and research: Why? How? *Alberta Journal of Educational Research*, 56(3), 246–256.

- De Landsheere, G., Masoner, P., Masoner, D., Dickson, G., Kida, H. (1981). *Relating theory to practice through innovation*. International Council of Education.
- Department of Education and Training (Australia) (2015). *Action now: Classroom ready teachers*. Department of Education and Training (Australia), viewed 24 Aug 2015, <http://apo.org.au/node/53020>
- Department of Education Training and Youth Affairs. (DETYA). (2000). *The impact of educational research: Research Evaluation Programme*. Canberra: Author.
- Devine, M. A., & King, B. (2006). Research update: The inclusion landscape. *Parks & Recreation*, 41(5), 22.
- Earles-Vollrath, T. (2012). Research to practice: Closing the gap introduction. *Intervention in School and Clinic*, 47(3), 135–138.
- Eash, M. J. (1968). Bringing research findings into classroom practice. *Elementary School Journal*, 68(8), 410–418. doi:10.1086/46046.
- Edwards, A., Gilroy, P., & Hartley, D. (2002). *Re-thinking teacher education: Collaborative responses to uncertainty*. London: Routledge/Falmer.
- El-Dinary, P. B., Pressley, M., Coy-Ogan, L., & Schuder, T. (1994). *The teaching practices of transactional-strategies-instruction teachers as revealed through collaborative interviewing* (Reading Research Report, Vol. 23). Athens/College Park: National Reading Research Center.
- European Agency for Special Needs and Inclusive Education. (2014). *Five key messages for inclusive education: Putting theory into practice*. Odense: Author.
- Everington, C., & Hamill, L. B. (1996). Restructuring teacher preparation programs for inclusion: The change process in one university. *Contemporary Education*, 68(1), 52–56.
- Foegen, A. (2012). Big ideas and core values. In *A measure of success: The influence of curriculum-based measurement on education*, p. 139.
- Foegen, A., Espin, C. A., Allinder, R. M., & Markell, M. A. (2001). Translating research into practice preservice teachers' beliefs about curriculum-based measurement. *The Journal of Special Education*, 34(4), 226–236.
- Foorman, B. R., & Moats, L. C. (2004). Conditions for sustaining research-based practices in early reading instruction. *Remedial & Special Education*, 25(1), 51–60. doi:10.1177/07419325040250010601.
- Foreman, P., & Arthur-Kelly, M. (2014). *Inclusion in action* (4th ed.). South Melbourne: Cengage Learning.
- Forlin, C. (2007). A collaborative, collegial and more cohesive approach to supporting educational reform for inclusion in Hong Kong. *Asia Pacific Education Review*, 8(2), 276–287.
- Forlin, C. (Ed.). (2010). *Teacher education for inclusion: Changing paradigms and innovative approaches*. New York: Routledge.
- Forlin, C., Kawai, N., & Higuchi, S. (2015). Educational reform in Japan towards inclusion: Are we training teachers for success? *International Journal of Inclusive Education*, 19(3), 314–331.
- Francis, N. J. B. (2002). *Transforming for educational reform: A case study of a teacher preparation center at a research university*. New Orleans: American Educational Research Association.
- Fuchs, D., & Fuchs, L. S. (1998). Researchers and teachers working together to adapt instruction for diverse learners. *Learning Disabilities Research and Practice*, 13(3), 126–137.
- Fuchs, D., & Fuchs, L. S. (2001). One blueprint for bridging the gap: Project PROMISE: (Practitioners and researchers orchestrating model innovations to strengthen education). *Teacher Education and Special Education*, 24(4), 304–314. doi:10.1177/088840640102400405.
- Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. London: Falmer Press.
- Fullan, M. (2000). Three stories of educational reform. *Phi Delta Kappa*, 81, 581–584.
- Fullan, M. (2003). *Change forces with a vengeance*. London: Routledge/Falmer.
- Fullan, M., & Hargreaves, A. (1992). *Understanding teacher development*. New York: Teachers College Press.
- Gersten, R., & Vaughn, S. (1997). What we know about using research findings: Implications for improving special education practice. *Journal of Learning Disabilities*, 30(5), 466–476.

- Gersten, R., Morvant, M., & Brengelman, S. (1995). Close to the classroom is close to the bone: Coaching as a means to translate research into classroom practice. *Exceptional Children*, 62(1), 52–67.
- Gersten, R., Baker, S. K., Shanahan, T., Linan-Thompson, S., Collins, P., & Scarcella, R. (2007). *Effective literacy and English language instruction for English learners in the elementary grades (NCEE 2007–4011)*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Golder, G., Norwich, B., & Bayliss, P. (2005). Preparing teachers to teach pupils with special educational needs in more inclusive schools: Evaluating a PGCE development. *British Journal of Special Education*, 32(2), 92–99. doi:10.1111/j.0952-3383.2005.00377.x.
- Goodlad, J. I. (1993). School-university partnerships and partner schools. *Educational Policy*, 7, 24–39. doi:10.1177/0895904893007001003.
- Goodrum, D. (2007). Becoming a better teacher. *EQ (Education Quarterly)*, 1, 6–7.
- Gore, J. M., Griffiths, T., & Ladwig, G. (2004). Towards better teaching: Productive pedagogy as a framework for teacher education. *Teaching & Teacher Education*, 20(4), 375–387.
- Gravani, M. N. (2008). Academics and practitioners: Partners in generating knowledge or citizens of two different worlds? *Teaching and Teacher Education*, 24(3), 649–659. doi:10.1016/j.tate.2007.09.008.
- Greenstein, A. (2014). Is this inclusion? Lessons from a very “special” unit. *International Journal of Inclusive Education*, 18(4), 379–391.
- Griffin, M. L., & Warden, M. R. (2006). The effects of a university. *International Journal of Learning*, 13(5), 187–194.
- Grima-Farrell, C. (2014). Curriculum-based measurement of oral reading fluency (CBM-R): An objective orientated evaluation study. *Support for Learning*, 29(4), 370–393.
- Grima-Farrell, C. (2015). Mentoring pathways to enhancing the personal and professional development of pre-service teachers. *International Journal of Mentoring and Coaching in Education*, 4(4), 255–268.
- Grima-Farrell, C. R., Bain, A., & McDonagh, S. H. (2011). Bridging the research-to-practice gap: A review of the literature focusing on inclusive education. *Australasian Journal of Special Education*, 35(2), 117–136. doi:10.1375/ajse.35.2.117.
- Grimes, J., & Tilly, W. D., III. (1996). Policy and process: Means to lasting educational change. *School Psychology Review*, 25(4), 465–76.
- Guba, E. G. (1967). *The role of educational research in educational change*. Bloomington: National Institute for the Study of Educational Change.
- Gunstone, R. F., & Northfield, J. R. (1986). *Learners – teachers – researchers: Consistency in implementing conceptual change*. San Francisco: American Educational Research Association.
- Gunstone, R. F., & Northfield, J. R. (1993). *Interplay between research and practice: A case study of a preservice teacher education course*. Paper presented at the Conference of the National Association for Research on Science Teaching, Atlanta. (ERIC Document Reproduction Service No. ED360296).
- Hall, G. E. (1980). *Evaluation of the delivery of services: A concern-based perspective for the design of evaluations*. Paper presented at the National Conference on Longitudinal Evaluation of Bilingual Programs Austin, Texas. (ERIC Document Reproduction Service No. ED186375).
- Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process*. Albany: State University of New York Press.
- Hall, G. E., & Hord, S. M. (2015). *Implementing change: Patterns, principles and potholes* (4th ed.). Upper Saddle River: Pearson.
- Hargreaves, A. (2007). Sustainable leadership and development in education: Creating the future, conserving the past. *European Journal of Education*, 42(2), 223–233. doi:10.1111/j.1465-3435.2007.00294.x.
- Hasbrouck, J. E., Woldbeck, T., Inhot, C., & Parker, R. I. (1999). One teacher’s use of curriculum-based measurement: A changed opinion. *Learning Disabilities Research and Practice*, 14(2), 118–126. doi:10.1207/sldrp1402_5.
- Hattie, J. A. C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Abingdon: Routledge.

- Hipp, K. K., Huffman, J. B., Pankake, A. M., & Olivier, D. F. (2008). Sustaining professional learning communities: Case studies. *Journal of Educational Change*, 9(2), 173–195. doi:[10.1007/s10833-007-9060-8](https://doi.org/10.1007/s10833-007-9060-8).
- Hord, S. (2008). Evolution of the professional learning community. *Journal of Staff Development*, 29(3), 10–15.
- Hord, S. M., Rutherford, W. L., Huling-Austin, L. L., & Hall, G. E. (1987). *Taking charge of change*. Austin: Southwest Educational Development Laboratory.
- Horsley, D. L., & Loucks-Horsley, S. (1998). CBAM brings order to the tornado of change. *Journal of Staff Development*, 19(4), 17–20.
- Hurley, E. A., Chamberlain, A., Slavin, R. E., & Madden, N. A. (2001). Effects of success for all on TAAS reading scores. *Phi Delta Kappan*, 82(10), 750–756.
- Klingner, J., Vaughn, S., Hughes, M. T., & Arguelles, M. E. (1999). Sustaining research-based practices in reading a 3-year follow-up. *Remedial & Special Education*, 20(5), 263–274. doi:[10.1177/074193259902000502](https://doi.org/10.1177/074193259902000502).
- Klingner, J., Arguelles, M. E., Hughes, M. T., & Vaughn, S. (2001). Examining the schoolwide “spread” of research-based practices. *Learning Disability Quarterly*, 24(4), 221–234. doi:[10.2307/1511112](https://doi.org/10.2307/1511112).
- Klingner, J., Ahwee, S., Pilonieta, P., & Menendez, R. (2003). Barriers and facilitators in scaling up research-based practices. *Exceptional Children*, 69(4), 411–419.
- Klingner, J., Vaughn, S., Arguelles, M. E., Hughes, M. T., & Leftwich, S. A. (2004). Collaborative strategic reading: “Real-world” lessons from classroom teachers. *Remedial and Special Education*, 25(5), 291–302. doi:[10.1177/07419325040250050301](https://doi.org/10.1177/07419325040250050301).
- Korthagen, F. A. J. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*. Mahwah: Lawrence Erlbaum Associates.
- Korthagen, F. A. J. (2004). In search of the essence of a good teacher: Towards a more holistic approach in teacher education. *Teaching and Teacher Education*, 20(1), 77–97. doi:[10.1016/j.tate.2003.10.002](https://doi.org/10.1016/j.tate.2003.10.002).
- Korthagen, F. A. J. (2007). The gap between theory and practice revisited. *Educational Research & Evaluation*, 13(3), 303–310.
- Korthagen, F. A. J. (2010). How teacher education can make a difference. *Journal of Education for Teaching*, 36(4), 407–423.
- Kurki, A., Boyle, A., & Aladjem, D. K. (2006). Implementation: Measuring and explaining the fidelity of CSR implementation. *Journal of Education for Students Placed at Risk (JESPAR)*, 11(1), 255–277.
- Kurniawati, F., De Boer, A. A., Minnaert, A. E. M. G., & Mangunsong, F. (2014). Characteristics of primary teacher training programmes on inclusion: A literature focus. *Educational Research*, 56(3), 310–326. doi:[10.1080/00131881.2014.934555](https://doi.org/10.1080/00131881.2014.934555).
- Kutash, K., Duchnowski, A. J., & Lynn, N. (2009). The use of evidence-based instructional strategies in special education settings in secondary schools: Development, implementation and outcomes. *Teaching and Teacher Education*, 25(6), 917–923.
- Lipsky, D. K., & Gartner, A. (1998). International perspectives on special education reform. *European Journal of Special Needs Education*, 13(1), 128–137.
- Little, M. E., & Houston, D. (2003). Research-into-practice through professional development. *Remedial and Special Education*, 24(2), 75–87. doi:[10.1177/07419325030240020301](https://doi.org/10.1177/07419325030240020301).
- Lloyd, J. W., Weintraub, F. J., & Safer, N. D. (1997). A bridge between research and practice: Building consensus. *Exceptional Children*, 63(4), 535–538.
- Loucks-Horsley, S., & Stiegelbauer, S. (1991). Using knowledge of change to guide staff development. In A. Lieberman & L. Miller (Eds.), *Staff development for education in the 90s: New demands, new realities, new perspectives*. New York: Teachers College Press.
- Louis, K. S., & Jones, L. M. (2001). *Dissemination with impact: What research suggests for practice in career and technical education*. St. Paul: National Research Center for Career and Technical Education.
- Mac Iver, M. A., Kemper, E., & Stringfield, S. (2003). *The Baltimore curriculum project: Final report of the four-year evaluation study*.

- Madden, N. A., Slavin, R. E., Karweit, N. L., Dolan, L. J., & Wasik, B. A. (1993). Success for all: Longitudinal effects of a restructuring program for inner-city elementary schools. *American Educational Research Journal*, 30(1), 123–148.
- Madelaine, A., & Wheldall, K. (2004). Curriculum-based measurement of reading: Recent advances. *International Journal of Disability, Development and Education*, 51(1), 57.
- Malone, M. R. (1984). Concerns based adoption model (CBAM): Basis for an elementary science methods course. *Journal of Research in Science Teaching*, 21(7), 755–768. doi:10.1002/tea.3660210709.
- Malouf, D. B., & Schiller, E. P. (1995). Practice and research in special education. *Exceptional Children*, 61(5), 414–424.
- Mangope, B. & Mukhopadhyay, S. (2015). Preparing Teachers for Inclusive Education in Botswana: The Role of Professional Development. *Journal of International Special Needs Education*, 18(2), 60–72. doi:http://dx.doi.org/10.9782/2159-4341-18.2.60
- Martens, B., Eckert, T., Begeny, J., Lewandowski, L., DiGennaro, F., Montarello, S., et al. (2007). Effects of a fluency-building program on the reading performance of low-achieving second and third grade students. *Journal of Behavioral Education*, 16(1), 38–53.
- McGrath, H., & Noble, T. (2010). Supporting positive pupil relationships: Research-to-practice. *Educational & Child Psychology*, 27(1), 79–90.
- McLeskey, J., & Billingsley, B. S. (2008). How does the quality and stability of the teaching force influence the research-to-practice gap? A perspective on the teacher shortage in special education. *Remedial & Special Education*, 29(5), 293–305. doi:10.1177/0741932507312010.
- McLeskey, J., & Waldron, N. L. (2006). Comprehensive school reform and inclusive schools. *Theory Into Practice*, 45(3), 269–278.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks: Sage Publications.
- Miller, D. N., George, M. P., & Fogt, J. B. (2005). Establishing and sustaining research-based practices at centennial school: A descriptive case study of systemic change. *Psychology in the Schools*, 42(5), 553–567. doi:10.1002/pits.20091.
- Miretzky, D. (2007). A view of research from practice: Voices of teachers. *Theory Into Practice*, 46(4), 272–280. doi:10.1080/00405840701593857.
- Mitchell, T. D. (2008). Traditional vs. critical service-learning: Engaging in the literature to differentiate two models. *Michigan Journal of Community Service Learning*, 14(2), 50–65.
- Mullen, C. (2008). Collaborative learning communities in schools. *Theory Into Practice*, 47(4), 367.
- No Child Left Behind (NCLB) Act of 2001, 20 U.S.C.A. § 6301 *et seq.*
- NSW Department of Education & Communities. (2012). *NSW national partnerships evaluation committee report for 2011*. Sydney. Retrieved from <http://www.nationalpartnerships.nsw.edu.au/resources/documents/NPEC-2011-Annual-Report.pdf>
- NSW Department of Education & Training. (2009). *New South Wales implementation plans for smarter schools national partnerships*. Sydney. Retrieved from <http://www.nationalpartnerships.nsw.edu.au/resources/documents/2009-Implementation-Plan.pdf>
- Nuthall, G. (2004). Relating classroom teaching to student learning: A critical analysis of why research has failed to bridge the theory-practice gap. *Harvard Educational Review*, 74(3), 273–306.
- Powers, J. D., Bowen, N. K., & Bowen, G. L. (2010). Evidence-based programs in school settings: Barriers and recent advances. *Journal of Evidence-Based Social Work*, 7(4), 313–331.
- Pratt, H. (1982). *Case studies of school improvement: A concerns based approach*. Washington, DC: National Institute of Education.
- Pratt, H., Thurber, J. C., Hall, G. E., & Hord, S. M. (1982, November). *Case studies of school improvement: A concerns based approach*. Paper presented at the meeting of the International School Improvement Project, Palm Beach.
- Ross, S. M., Smith, L. J., Casey, J., & Slavin, R. E. (1995). Increasing the academic success of disadvantaged children: An examination of alternative early intervention programs. *American Educational Research Journal*, 32, 773–800.

- Ross, S. M., Smith, L. J., Madden, N. A., & Slavin, R. E. (1997). Improving the academic success of disadvantaged children: An examination of success for all. *Psychology in the Schools, 34*(2), 171–180.
- Russell, T., McPherson, S., & Martin, A. K. (2001). Coherence and collaboration in teacher education reform. *Canadian Journal of Education, 26*(1), 37–55.
- Rutherford, W. L. (1982). *Describing the concerns principals have about facilitating change*. Austin: Austin Research Development Center for Teacher Education.
- Rutherford, W. L. (1986). *Teachers' contributions to school improvement: Reflections on fifteen years of research*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco. (ERIC Document Reproduction Service No. ED 271462).
- Schmidt, R. J., Rozendal, M. S., & Greenman, G. G. (2002). Reading instruction in the inclusion classroom: Research-based practices. *Remedial and Special Education, 23*(3), 130–140. doi:10.1177/07419325020230030101.
- Schneider, B., & McDonald, S. K. (2006). *Scale up in education: Volume 2: Issues in practice*. Blue Ridge Summit: Rowman & Littlefield Publishers.
- Schulz, R. (2010). Inquiry-orientated teacher education. In E. Baker, B. McGaw, & P. Peterson (Eds.), *International encyclopaedia of education* (3rd ed.). Oxford: Elsevier.
- Shallcross, T., Loubser, C., Le Roux, C., O'Donoghue, R., & Lupele, J. (2006). Promoting sustainable development through whole school approaches: An international, intercultural teacher education research and development project. *Journal of Education for Teaching, 32*(3), 383–401. doi:10.1080/02607470600782427.
- Slavin, R. E. (2004). *Translating research into widespread practice: The case of success for all*. Baltimore: Success for All Foundation.
- Slavin, R. E., & Madden, N. A. (2001). *Success for all and comprehensive school reform evidence-based policies for urban education*. Washington, DC: U.S. Dept. of Education, Office of Educational Research and Improvement, Educational Resources Information Center.
- Slavin, R. E., Madden, N. A., Cheung, A., Borman, G. D., Chamberlain, A., & Chambers, B. (2006). *A three-year randomized evaluation of success for all: Final reading outcomes*. Baltimore: Center for Data-Driven Reform in Education, Johns Hopkins University.
- Smith, G. J., Richards-Tutor, C., & Cook, B. G. (2010). Using teacher narratives in the dissemination of research-based practices. *Intervention in School and Clinic, 46*(2), 67–70.
- Sparks, D., & Richardson, J. (1997). A primer on professional development. *Journal of Staff Development, 18*(4), 1–8.
- Stecker, P. M., Fuchs, L. S., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: Review of research. *Psychology in the Schools, 42*(8), 795.
- Sweeny, A. E. (2003). Theory and practice in science teaching. *Teachers and Teaching: Theory and Practice, 9*(2), 107–132.
- Sydoriak, D., & Fields, M. (1997). Response to bridging the research-to-practice gap. *Exceptional Children, 63*(4), 529–530.
- The National Commission on Teaching & America's Future. (1996). *What matters most: Teaching for America's future*. Woodbridge: Author.
- Titone, C. (2005). The philosophy of inclusion: Roadblocks and remedies for the teacher and the teacher educator. *Journal of Educational Thought, 39*(1), 7–32.
- Toch, T. (1982). Teacher centres may collapse when they are needed most. *Education Week, 1*(22), 5–14.
- Tyack, D., & Cuban, L. (1995). *Tinkering toward utopia: A century of public school reform*. Cambridge, MA: Harvard College.
- U.S. Department of Education (2004). Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service, *Evaluation of the comprehensive school reform program implementation and outcomes: Third-year report*. Washington, DC: Author.
- Vanderlinde, R., & van Braak, J. (2010). The gap between educational research and practice: Views of teachers, school leaders, intermediaries and researchers. *British Educational Research Journal, 36*(2), 299–316.

- Vaughn, S., Hughes, M. T., Schumm, J. S., & Klingner, J. (1998). A collaborative effort to enhance reading and writing instruction in inclusion classrooms. *Learning Disability Quarterly*, 21(1), 57–74. doi:[10.2307/1511372](https://doi.org/10.2307/1511372).
- Vaughn, S., Klingner, J., & Hughes, M. (2000). Sustainability of research-based practices. *Exceptional Children*, 66(2), 163–171.
- Vaughn, S., Klingner, J. K., & Bryant, D. P. (2001). Collaborative strategic reading as a means to enhance peer-mediated instruction for reading comprehension and content-area learning. *Remedial & Special Education*, 22(2), 66–74. doi:[10.1177/074193250102200201](https://doi.org/10.1177/074193250102200201).
- Vavrus, M. (2002). *Transforming the multicultural education of teachers: Theory, research and practice*. New York: Teachers College Press.
- Villa, R. A., & Thousand, J. S. (1996). Preparing teachers to support inclusion: Preservice and inservice programs. *Theory Into Practice*, 35(1), 42–51.
- Volonino, V., & Zigmond, N. (2007). Promoting research-based practices through inclusion? *Theory Into Practice*, 46(4), 291–300. doi:[10.1080/00405840701593873](https://doi.org/10.1080/00405840701593873).
- Waldron, N., & McLeskey, J. (2010). Establishing a collaborative culture through Comprehensive School Reform. *Journal of Educational and Psychological Consultation*, 20(1), 58–74.
- Winn, S., & Zundans, L. (2004). University and school connections: Enhancing literacy development of primary aged children with challenging needs and the skills of special education teachers in training. *Special Education Perspectives*, 13(1), 75–88.
- Ysseldyke, J. E. (1989). The future of research in special education. In J. B. Jordan (Ed.), *Special education yearbook* (pp. 30–39). Reston: The Council for Exceptional Children.
- Ysseldyke, J. (2001). Reflections on a research career: Generalizations from 25 years of research on assessment and instructional decision making. *Exceptional Children*, 67(3), 295–309.
- Zundans, L. (2007). *Incorporating theory and practice: What works for university students*. Wollongong: ATEA.

Chapter 3

The Collective Case Study Design: Comparing Six Research to Practice Case Studies

The depth is in the detail as research is a process, not an event.

Abstract Methodological terminology can sometimes be seen as a foreign language to those who are expected to be informed consumers of researchers. This chapter describes the methodological structure used in this research in detail with the aim of providing clarity around research decisions and protocols. It refutes any notions of teachers being perceived as objects of research or reform to teachers being change agents who are pivotal to inclusive education and the successful outcomes of students.

The fundamentals and critical features of empirical case study research design are featured through this chapter. The three distinct phases that comprise this study and are used as the operational pathway are also defined and described. The first phase of the research, the exploration phase, sought reports from teachers' on the factors that contributed to the success or failure of the research projects they were implementing in their classrooms. This data was collected prior to teachers being introduced to the information derived from the literature.

The second phase of this study was the explanation phase. During this phase teacher participants were introduced to a 75 factor research to practice survey and a semi structured interview, based on the RTP knowledge gained from the analysis of five bodies of literature. Teachers responded to whether these factors were identified in their cases using a numerical (1–5) Likert scale. They also presented written responses to open-ended questions about other RTP factors that significantly contributed to the status of their projects at various stages of implementation.

The final data collection stage, the expansion phase, consisted of an opportunity for all teachers to contribute to a focus group discussion. Three Figures and Tables are presented to provide a visual overview of the phased research questions and the knowledge, experiences and trajectories reported by teachers as they progressed through the stages of implementing, monitoring and evaluating a range of validated research projects.

This chapter:

- Describes the methodology implemented throughout this investigation and highlights the importance of comprehending and analysing the specific detail critical to research rigour.
- Defines case study research, the different types of case study and related approaches that were used to inform the well considered design decisions.
- Presents a definition of comparative case studies with related strengths and limitations.
- Introduces Yin's (1994) complex case study design and Fraenkel and Wallen's (2006) description of the features of comparative case study.
- Explains how replication logic is utilised as an approach that ensures consistency in implementation.
- Describes data collection methods, analysis and validity techniques employed to address the research questions.
- Presents the specific procedures used in the context of the study describing, participant researcher bias, participant details, setting, research design, data collection and analysis processes.
- Highlights the importance of reading and comprehending the methodological decisions as well as focussing on the elements essential to practical applications.
- Outlines how important the methodological decisions are to the validity of the research and how they are at the core of this chapter.
- Presents key components of comparative case study analysis for future use in national and international RTP investigations.
- Specifics related to the methods and research instruments are presented in detail to provide a scaffold for professionals who may wish to use this methodological approach (or elements from it) to embark upon their own case study research journey.

Vignette

On thinking about this research and writing this chapter I realize it wasn't until I was completing my own teacher led research in my school that I really began to comprehend the depth and importance of research methodology. Like many teachers I had read research papers and would often skim the methods section as I wanted to get to the *important bits*. **How important the important bits became is at the core of this chapter.**

Prior to conducting my own research the important sections were the ones that were useful in the practical sense of my work in my classroom. It became easy to be enticed by the glossy well-marketed programs/resources, which claimed to have a research base, as they found their way into our schools. The suppliers highlighted the *important bits* that pertained to how the products would help teachers enhance student outcomes. Yet below the surface there was an absence. An absence of the depth in the details that evoked clarity around the specifics of the research.

(continued)

I grappled as I realised that methodology (the what, why, who and how of the research base) was not presented in detail. Neither was knowing as a teacher what we really needed to know to ensure that research was empirically validated. I wanted to know how this resource/program would help my colleagues and I successfully engage and teach our students with a diverse range of needs and abilities.

In the schools I taught at, my colleagues and I were always rather cautious around the programs we implemented. After all, our curriculum was overcrowded and we were time poor. We struggled to be confident that we would get the right program that would benefit all the students in our class. We struggled with the complexity of finding, implementing and sustaining that right product, package or resource.

In fact at times it felt like we were the products of education systems and global directives that clearly encouraged each of us to implement *research based* practices. As a result we were driven towards resources and programs that *claim* to have a research base. Naively I, like many of my colleagues, didn't fully investigate the soundness of the research and we didn't fully comprehend how to critique research. We weren't researchers but the women and men who had 30 students in our classes all day and every day. We assumed researchers were better able to critically analyse research and then we would engage in the strong programs that would be available to us as school based educators. That myth was soon dispelled once my comprehension of research methodology began to strengthen.

3.1 Introduction

This chapter describes the methodological approach of case study research which was employed to enhance knowledge on how research can be sustained in our schools. Broadly speaking the purpose of all research is to enhance knowledge and inform action. Yet a problem that plagues education (and other fields) is the slow conversion of research into practice. This concern is at the core of this work and the following discussion strives to provide a detailed account of the methodological decisions used to guide this case study research in an effort to reduce the disconnect that may exist between those who create the evidence and those who are positioned to implement the research findings. All key elements related to the methods and research instruments are presented in detail to provide a scaffold for professionals who may wish to use this methodological approach (or elements from it) to embark upon their own case study research journey.

The chapter begins by defining case study research in order to position this research within this methodology. The types of case study and related approaches that were used to guide the design decisions are also presented. A definition of comparative case studies with related strengths and limitations precedes the brief introduction of Yin's (1994) complex case study and Fraenkel and Wallen's (2006) description of features of comparative case study. Both sources were used to define

a unique operational pathway of this case study design *which may be utilised in future RTP investigations*. Replication logic is introduced as an approach that promotes consistency in implementation throughout the study. This is followed by a description of the data collection methods, analysis and validity techniques employed to address the research questions. The chapter concludes with the specific procedures used in the context of the study describing, participant researcher bias, participant details, setting, research design, data collection and analysis processes.

3.2 The Context and Purpose of This RTP Work

A multiple or collective case study approach was used to investigate the implementation of inclusive education reforms in Western Sydney school settings that ranged from Kindergarten to year 10. The purpose of this study was to determine those factors that influenced the successful translation of RTP and those that impeded it. Six discrete case studies implementing research-based inclusive educational practices across a range of school settings were used to identify those factors. The content of the individual cases included literacy, assessment, peer tutoring and spelling (cases are introduced in Chap. 4). Six out of ten students who participated in an education system funded Masters graduate teacher professional experience program, to promote inclusive education, participated in this research.

Part of the experience involved designing and implementing an independent research intervention in their schools. The research-based project was to specifically address the needs of their individual settings. This task was the culmination of a 2.5 year university based Master's course. The final subject within this Master's course was the capstone experience of the program. The course and subjects were designed using a theoretical framework derived from research on complex systems (Bertram and Pascal 2002) and developed by Bain (2007). Bain (2007) identified six principles of self-organization that were applied in the course design process. These include simple rules, embedded design, similarity at scale, feedback, dispersed control, and schema applied to course design. The theory represented a response to concerns described in the teacher education literature and called for coherent theory driven teacher preparation programs (Forlin et al. 2015; Gore et al. 2004; Tomlinson 2004; Morrison 2002; Davis and Sumara 2006).

This work examined six school based RTP cases to build on prior knowledge, instantiate the existing literature, and further expand our understanding of the factors that both enabled and interfered with the successful translation of RTP in inclusive education settings. It investigated the extent to which the factors identified in the existing research exerted an influence in the cases and **how**. It expanded on existing research by investigating other possible sources of influence on the RTP dimensions of the cases.

Multiple case study methodology was used to establish whether the innovations were sustained over time and what factors contributed to their status of sustained, scaled or extinct (Yin 2003). An ex post facto causal-comparative research design

was employed to study the cases (Miles and Huberman 1994). Each school was the subject of an individual case and the use of the multiple case study method, allowed for the detailed investigation of multiple cases across the schools. Multiple case study design allowed for the extensive description and content analysis critical to investigating the RTP phenomenon that naturally occurred. Data from multiple cases is considered more solid and compelling than the investigation of a single case (Herriott and Firestone 1983; Yin 2003), enhancing the articulation of why the experiences occurred as they did. This methodology included the triangulation of cases with the existing literature in the field as part of the methodology.

Semi-structured and open-ended one to one interviews, focus groups, a survey and analysis of permanent product records were methods used to profile each case. Data was compiled, analysed and compared across cases. The research questions were divided into three sections that represented the phases of the study. The first phase being the exploration phase, examined the existing literature and initial teacher perceptions of relevant RTP factors. The second phase, the explanatory phase, used these literature-based assertions to develop survey and interview questions. Participant perspectives were collected in response to these questions in surveys and interviews, to explain the factors that were detrimental or beneficial in addressing the RTP gap in real life systems and settings. The final expansion phase, which was conducted in a focus group format, identified other RTP factors that emerged from the specific cases. The methodology used in this research permitted the modification and refinement of research questions from phase to phase based on the findings.

The data collection methods employed were planned, yet it was intended that flexibility in the design of interview questions be maintained (Ezzy 2002). This responsive process to question generation aimed to elicit detailed responses as one data source was used to inform the next. This developmental process enabled one phase of the study to inform the next in an iterative fashion. This deliberate approach to designing the interview questions intended to reveal meaningful explanations as to **how and why** specific RTP details were significant to individual research based projects. The data collection methods outlined were used to answer the following central question by responding to the exploration, explanation and expansion research questions. The wording in italic font represents the changes made after the data from the previous phase was analysed to inform the next and may be beneficial for further RTP investigations across other contexts:

3.3 Central Research Question

What are the factors *and relationships between them* that contributed to the status of research-based projects in inclusive education settings?

3.3.1 Exploration Phase Questions

What factors identified in the literature contribute to sustaining RBP in inclusive education settings? How have these factors been identified? To what extent have these factors been validated through empirical research? What are the key contributors to the RTP gap identified by research participants? How do they compare to existing literature?

3.3.2 Explanation Phase Questions

How do factors identified in the cases contribute to the status of RBP in inclusive education settings? In what ways do those factors exert an influence?

Additional question established after the analysis of the data collection through the exploration and explanation phases- How have the identified relationship between factors exerted an influence on the practical application and sustainment of the projects?

3.3.3 Expansion Phase Questions

What factors, other than those identified in the exploration and expansion phases, contribute to the status of RBP in inclusive education settings?

Additional question established after the analysis of the data collection through the exploration and explanation phases- what were the differences and consistencies in the relationships between the RTP factors that contributed to the status of the projects that were identified by the research participants?

3.4 Case Study Research Design

Case study design falls broadly within the theoretical underpinnings of qualitative research. According to Creswell (1998) a case study is defined as an exploration of a ‘bounded system’ or case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context. Some consider ‘the case’ as an object of study (Stake 1995) while others considered it a methodology in itself (Merriam 1998). Creswell (1998) described the bounded system as being bounded by time and place, and it is the case being studied – a program, an event, an activity, or individuals. It allowed for an important example to be “... studied extensively and varied data collected and used to formulate interpretations applied to specific cases (e.g., a particular school board) or to provide generalizations” (Fraenkel and Wallen 2006, p. 13).

Miriam's (1998) notion of a bounded system would categorise each of the six research projects as individual systems. Bounded within each unit are the people, experiences and all details relevant to that one project and unique setting. Huberman and Miles (1994) suggested that this strategy focuses on the understanding of case dynamics. "It is crucial to have understood the dynamics of each casewithout that superficiality sets in" (Miles and Huberman 1994, p. 207). Case dynamics referred to specific details that pertained to each case and the interrelationships between them. According to Mishler (1986) and Miles and Huberman (1994) an understanding of the synthesis of these details and relationships in each case is required prior to effective cross case analysis.

Put simply, this study is an investigation of the dynamics within each case in order to gain specific details prior to any cross case analysis. Surveys, interviews and permanent product records provided details that were case specific. Yin's (1994) causal link proposal (analyse of data by building an explanation about the situation) was investigated in 'real life interventions' using a framework that was developed using RTP literature, to explore, explain and expand the knowledge of factors that contributed to the status of each of the six research-based projects over a 3-year period across multiple school settings. Given the need for an explanation of real life complex causal links and an understanding of specific case dynamics within and across each bounded system, case study design was selected as an effective methodology for this investigation.

3.4.1 Are There Different Types of Case Study Designs?

The following section provides a brief overview of the types of case study approaches that influenced this research design specifically developed and implemented to investigate this RTP phenomenon. Literature from Yin (1994), Datta (1990), and Fraenkel and Wallen (2006) influenced the design framework and elements of their work are presented. This section begins with a brief account of the general uses and types of case study, prior to introducing the research framework used in this investigation.

Case study approaches have been used widely in medical, business and legal investigations. "In general, case studies are a preferred strategy.... when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real life context" (Yin 1994, p. 1). Examples of ways case study research has been employed in the field of education include: the study of students with special needs in regular classrooms, the use of various technologies in educational settings, evaluating comprehensive reforms, and assessing the impact of legislation on education (Janney and Snell 1997; Yin and Davies 2007).

Broadly speaking I chose to utilise a number of different approaches to strengthen my investigation. This qualitative study is influenced by elements of the types of case studies described by Yin (1994), Datta (1990), and Fraenkel and Wallen (2006). Datta (1990) categorizes case studies into six groups, which include illustrative case

studies, exploratory case studies, critical instance case studies, program implementation case studies, program effect case studies and cumulative case studies. Features of Datta's (1990) program effects case study design provided a lens in this study to investigate the impact of programs and provide inference about reasons for success or failure. Program effects case studies are used to compare and contrast multiple variables across many sites to facilitate depth of analysis. Datta's (1990) features that influenced this study included the use of methods such as examining literature to identify specific findings or assertions. Case study investigations allow for researchers to maximize the usefulness of this information.

Stake (1995) identified three types of case studies: intrinsic, instrumental and multiple. In an intrinsic study the researcher is specifically interested in understanding a situation or an individual. Through detailed description, the researcher seeks to understand the case in all parts, including its inner workings. Intrinsic case studies are often used in exploratory research in which the aim is to understand more about some little known phenomenon by studying it in depth. Instrumental case study is interested in more than a particular case. The researcher investigates a particular case as a means to a larger goal. They are interested in drawing conclusions that apply beyond a particular case. Multiple case studies involve a number of cases being investigated at the same time as part of one overall study to generate the detailed description within and between cases. This research is an example of a multiple case study design as the six cases were investigated concurrently as part of one RTP investigation.

Yin (1994) provided a specific description of six types of case studies that are presented in Table 3.1. He suggested that exploratory, descriptive and explanatory studies can exist within single and multiple case study designs. One of the major variations in variables between these six different design types is the number of cases employed and the functions they serve. "Nevertheless, this does not imply that the boundaries between the strategies – or the occasions when each is to be used – are always clear and sharp. Even though each strategy has its distinctive characteristics, there are large areas of overlap among them" (Yin 1994, p. 4). In brief, he uses one or more cases to investigate different aspects of program implementation and effects (Yin 2003). Yin (1994) described descriptive cases that require a descriptive theory that must cover the depth and scope of the case under study. Case studies have additionally been loosely defined in terms of the disciplinary orientation or by function. Within the disciplinary orientation one might find ethnographic, historical, psychological, or sociological case studies.

Table 3.1 Yin's (1993, p. 5) six different types of case studies

Single case	Single case	Single case
Exploratory study	Explanatory study	Descriptive study
Multiple case	Multiple case	Multiple case
Exploratory study	Explanatory study	Descriptive study

In this RTP work I intentionally linked Datta's (1990) investigation and verification elements of the program effects case study design with Yin's (1994) multiple case study design. These perspectives have been linked to explore existing literature to identify RTP factors, their sources, potential strengths and gaps. Yin's (1994) exploratory phase of case study research was employed through the examination of literature for relevant factors prior to the exact definition of the research questions. Some may consider this type of investigation as a prelude to larger social research. During the explanatory phase, the in-depth analysis elements of causal comparative studies enabled the factors identified through the literature review to be investigated across multiple cases. These features were beneficial in addressing the purpose of this complex case in real life interventions. The final expansion phase was incorporated to identify any other RTP factors beyond those identified in the literature that emerged as a result of the empirical investigation of the six cases.

The dominant thread that ran through this study was the need to address the lack of research that provides understanding of what factors make research-based projects sustain and scale in practical applications. Yin's (1994) multiple case study design provided organizational scaffolds that aligned with the nature of this investigation. Yin's (1994) design directly forged links between the exploration and explanation phases of the research questions, to the appropriate data collection and analysis required to answer them. This is important for investigations that have descriptive, exploratory and explanatory purposes.

3.5 Understanding Causal Comparative Case Study Research Design and Its Components

The following section briefly defines causal comparative case study, outlines the strengths and limitations of the approach and presents two causal comparative perspectives. It was interesting to discover that Fraenkel and Wallen (2006) describe key features of causal comparative research from a more quantitative approach, while Yin's (1994) presents a detailed qualitative perspective. Although this study is qualitative, knowledge and use of complimentary features of both perspective provided a solid base to guide the quite a unique operational pathway of this research, through the descriptive, exploratory, explanatory and expansion phases.

Bogdan and Biklen (2007) described comparative studies as "two or more cases that are done and then compared and contrasted" (Bogdan and Biklen 2007, p. 69). Fraenkel and Wallen (2006) also noted that causal comparative research could also be referred to as ex post facto research, as it provides a means to determine the cause for, or consequence of, existing differences in groups of individuals.

3.6 Describing the Unique RTP Operational Pathway Approach

Given the intent of this investigation, features quantitative and qualitative approaches are combined to provide an in depth understanding of the status of each case in retrospect. Elements of both approaches provided insights from different perspectives. This was done through employing Yin's (1994) five components of research design with Fraenkel and Wallen's (2006) key features of causal comparative designs. The use of features of both approaches to explore, explain and expand upon RTP factors provided an insight into the factors that bridge the RTP gap. Figure 3.1 represents the operational pathways derived from my merger of both approaches. This visual representation provided a scaffold for the purpose of this research design. It supports Yin's (2003) suggestions that case study research can be influenced by the emulation of the scientific method. It is followed by a brief description of the key features of causal comparative designs as described by Yin's (1994) and Fraenkel and Wallen's (2006). This figure provides a len into the approach, sequence, methods and logic underlying this merged research framework.

This operational pathway displays Yin's (1994) influential components in the design of this study in bold font and Fraenkel and Wallen's (2006) descriptions in italic font. Each component is outlined briefly below to clarify the relationship between the approaches in the conduct of this study.

Yin's (1994) components of research design include: research questions, propositions, unit(s) of analysis, logic linking the data to the propositions, and the criteria for interpreting the findings. These components are described below.

3.6.1 *Questions*

Research Questions were designed to specifically identify the factors that contributed to the status of research-based practices at the implementation and subsequent phases of individual projects. The central "what" question outlined at the start of the chapter is exploratory in the initial program phase, then moved into an explanatory approach as the researcher analysed the quantitative survey data. The expansion phase sought additional "how" explanations through more qualitative methods, before any expansion on RTP phenomenon proposals were investigated.

3.6.2 *Propositions*

Study Propositions presented in Table 3.2 detail these factors that were examined in the scope of this RTP study. The specific propositions were selected in an attempt to ensure this case study remained within feasible and manageable limits.

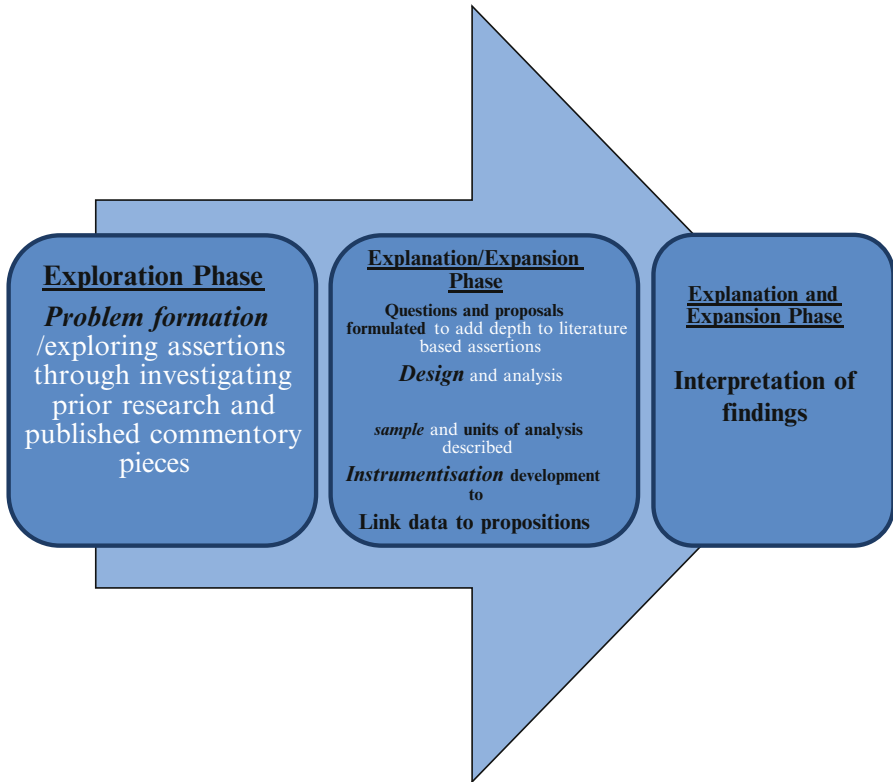


Fig. 3.1 RTP study operational pathway using elements of Yin’s (1994) key features of case study design and Fraenkel and Wallen’s (2006) description of causal comparative design

3.6.3 *Unit(s) of Analysis*

Unit of Analysis relates to the fundamental problem of defining a case. Throughout this research the unit of analysis are represented by the unique variables of each case.

3.6.4 *Linking Data to Propositions and Criteria for Interpreting Findings*

Linking data to propositions, and criteria for interpreting findings represented a data analysis step in this case study research (see Table 3.2). Yin (1994) described proposition formation as a tool or a way of keeping the investigations on track. He advocated that a set of proposals (reflective of research questions) have the capacity to

Table 3.2 Overview linking Yin’s (1994) components of research design including propositions, unit(s) of analysis and logic linking the data to the propositions

Propositions	Data collection using mixed methods	Analysis
Exploration: key components to reducing the RTP gap have been identified through the literature commentary pieces and intervention research	An investigation of literature was conducted initially to identify key RTP factors. Features of these claims were examined and used to develop specific research questions and data collection tools	Linking questions, data, propositions through qualitative and aspects of quantitative paradigms as presented by Yin (1994) and Fraenkel and Wallen (2006)
Explanation: lack of empirical evidence exists in key RTP identifiers. RTP knowledge gained from PD, TE, CSR and CBAM efforts identified major themes that need to be validated, explained and expanded to gain an in depth understanding of these RTP factors. Empirical evidence that examined specific RTP cases was employed to add rigor to these claims	A two-phased survey investigated specific details pertaining to individuals, their setting and the examination of literature based factors. More qualitative information regarding process, events, structure and outcomes were sought through the use of open-ended and semi structured interviews, permanent product records and focus groups, to explore factors more deeply	Directly linking questions and propositions, sought to analyse research through the employment of mixed data methods from practical applications to verify RTP claims
Expansion: other factors may contribute to the status of research-based projects in inclusive settings		

directly link research questions to data collection and analysis. Table 3.2 displayed the use of this tactic specifically for the purpose of this investigation as it linked Yin’s (1994) propositions, unit(s) of analysis and logic and linking the data to the propositions components as a tool to streamline the intersecting purpose of this investigation.

Fraenkel and Wallen’s (2006) more quantitative description of casual-comparative research included problem formation, sample, instrumentation and design. Features of this perspective were merged with Yin’s (2003) qualitative approach through case study design (see Table 3.2). The six case study teachers all experienced the same graduate teacher training, however it was expected that the sustainability of their projects would vary. This causal comparative approach investigated the causes of the differences in project status that already existed. Through this design, the knowledge from each of the six experiences formed a converging and complimentary base, which was used to explain what factors impacted on the sustainability of research in practice.

Table 3.2 provides a projection of the study’s direction, using Yin’s (1994) 2x2 matrix of four major case study designs and his proposal of the five key components of research design (Yin 1994). This qualitative study that was predominantly influenced by Yin’s (1994) work was strengthened by the use of features of Fraenkel and Wallen’s (2006) description of causal comparative research. Given this case study

dealt with a logical problem not a logistical problem, the main purpose was to ensure that the evidence collected addressed the initial research questions in an empirically validated fashion.

This research merges two differing, yet complimentary causal comparative approaches as presented by Yin (1994) and Fraenkel and Wallen's (2006) to comprehend more deeply what needs to happen to make research *stick* in inclusive classrooms. In brief, RTP concerns were identified (problem formation). Exploration and confirmation of these assertions and possible solutions were then identified through published articles. Questions and proposals were formulated, with the data collection methods and analysis decisions being directly linked to these questions and proposals. The interpretation of findings explained and expanded upon this RTP phenomenon at the centre of this inclusive education investigation.

The following section describes how replication logic was used within the broader case study approach. Replication logic was employed as a means of maintaining consistency in and across the investigation of each case. Using a repeated operational approach in the same manner aimed to enhance the quality and rigor of the RTP study as guidelines were replicated to ensure regularity in data collection and analysis. Given that this study employed causal comparative case study designs to address the purpose of this research, the following replication details are included to specify how uniformity in approach was maintained in this study. This same approach may be beneficial to those conducting multiple case study research in the future.

3.7 Replication Within the Multiple Case Study Design: Consistency Across Cases

The six case studies followed a “replication logic” derived from the work of Yin et al. (1983). The replication of data collection methods, sequence, analysis and approach was consistent across all six cases. This consistency allowed the use of multiple cases to be “considered more compelling, and more likely to lend themselves to generalisations” (Fraenkel and Wallen 2006, p. 439). The cases ranged from kindergarten to secondary programs (Year 10) conducted in inclusive educational settings. The content of implementations ranged from literacy programs to peer tutoring initiatives. It was expected that this range of cases would drive responses from different perspectives, allowing the analysis of differences and commonalities of factors that influenced the implementation and sustainment of RTP cases.

The use of this replication logic approach guided the replication of data collections tools and process with differences and convergences being identified during analysis and being treated individually. All six cases were considered separate bounded units with convergent evidence being sought for each RTP factor. A summary of each case indicated how and why factors contributed to the individual project status at annual points. Analysis and conclusions were sought within each case and then across all the six cases, in search for a high degree of certainty of the fac-

tors that contributed to the success, sustainment or extinction of research-based practices. Given that this RTP concern has been an ongoing issue and hampers the progression of global inclusive education directives, a high degree of certainty is required (Fig. 3.2).

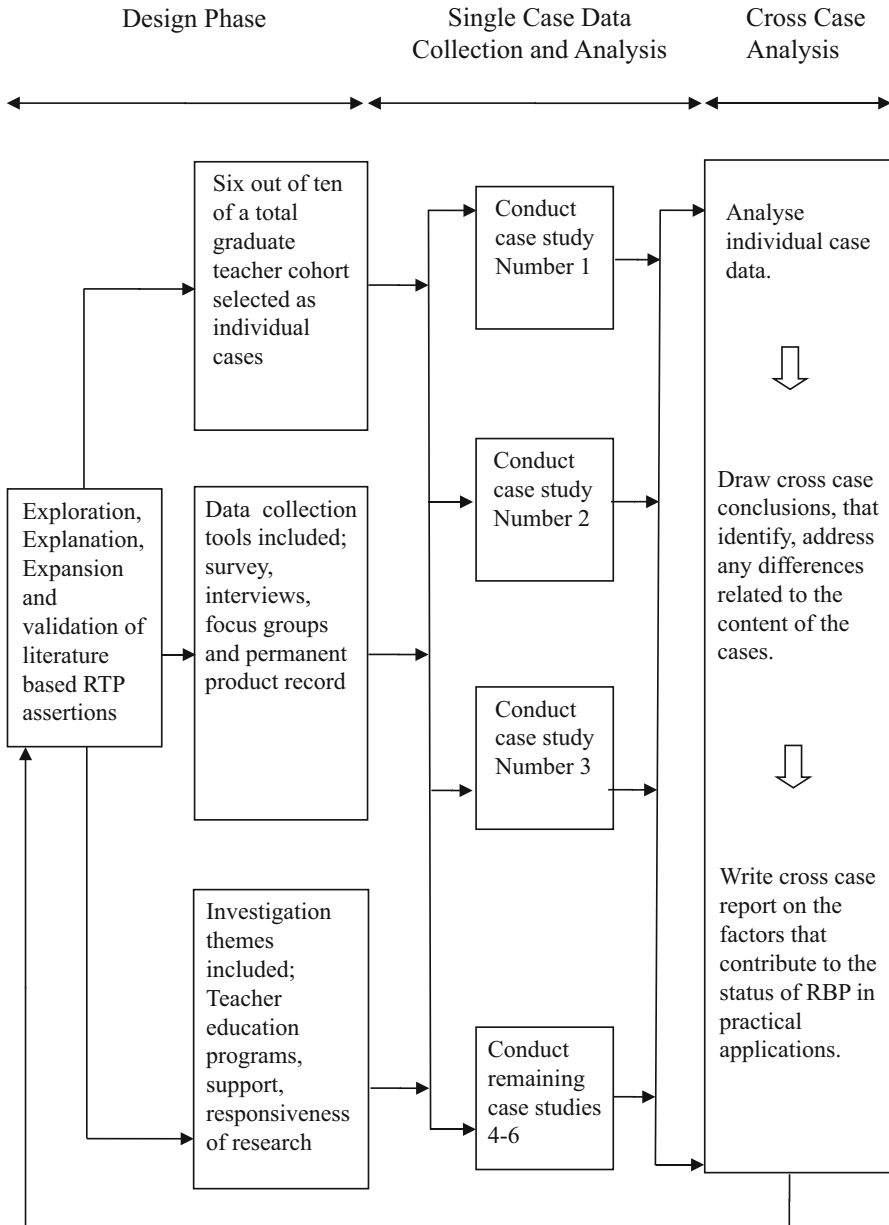


Fig. 3.2 Replication logic as derived from Yin et al. (1983)

3.8 Blending Differing Research Perspectives Is Complex

3.8.1 *Breaking Down the Terminology*

3.8.1.1 Validity, Reliability and Trustworthiness in Case Study Research

Complexities exist when attempting to embark upon research that cites a methodological approach framed from differing research perspectives. Consequently terms from both paradigms are briefly identified and presented in an attempt to add clarity to the research pathway. Data collection methods are also described to enhance. Campbell's (1975) view on logical positivism is presented to frame this selected qualitative paradigm, which was informed by features of experimental research for this exploratory, explanatory and expansion investigation. **The selected validity tactics are outlined to present a customised yet rigorous case study design.**

Reliability and Validity

Qualitative and quantitative researchers view validity and reliability concepts very differently (Golafshani 2003). **Reliability in terms of qualitative work** corresponds to the notion of dependability (Lincoln and Guba 1985). Reliability refers to a dependable way of information elicitation that would “generate understanding” (Stenbacka 2001, p. 551). Joppe (2000, as cited in Golafshani 2003) described **validity from a quantitative paradigm** as a way of determining whether research truly measures what was intended or how truthful the results are. Enthusiastic discussion amongst some qualitative researchers exists about the relevance of these terms in qualitative research (Golafshani 2003). Greater consensus is present about the need for a qualifying check being required to add quality to research efforts (Freankel and Wallen 2006; Golafshani 2003). Some authors suggest that reliability, validity, trustworthiness, quality and rigor are important to research in any paradigm (Yin 1994; Golafshani 2003).

Yin (2003) states that in case study design “the goal of reliability is to minimise the errors and biases in a study” (Yin 2003, p. 37). The use of a case study protocol, case study database, the outlined replication approach and use of triangulation require procedures to be clearly documented in detail. These tactics were employed to address these reliability concerns of this work. In essence this systematic research design uses the carefully planned operational pathway that built on literature assertions and contingencies to conduct a causal comparative investigation of RTP factors in this study.

Trustworthiness

Some qualitative researchers have developed their own concepts of validity and use what they consider more appropriate terms; trustworthiness, quality and rigor (Lincoln and Guba 1985; Mishler 1986; Seale 1999; Stenbacka 2001). In qualitative

research the use of these concepts are essential to the study being viewed as trustworthy and beneficial. Trustworthiness, credibility, confirmability and dependability are the concepts generally offered to represent a logical set of statements in case study design (Lincoln and Guba 2000; U.S. General Accounting Office 1990; Yin 1994). Trustworthiness is a term that is used in qualitative research that encompasses both reliability and validity, although they are treated individually in quantitative research (Golafshani 2003). Maxwell (2004) referred to credibility as the correctness of a description, conclusion, explanation or interpretation. Confirmability refers to the degree to which the results could be confirmed or corroborated by others. Lincoln and Guba (2000) introduced dependability as a parallel to reliability in qualitative research. They suggested that a notion of dependability focused on the researcher's responsibility for ensuring the research process was logical, traceable and documented. Examination of trustworthiness is critical to ensuring reliability in qualitative research (Seale 1999), and reliability can be viewed as a consequence of validity (Patton 2001).

Wainer and Braun (1998) described reliability in terms of whether results are replicable and validity in terms of whether the means of measurement are accurate and whether they actually measure what was intended. Yin (2003) introduced logical positivistic views as a way of validating inferences from events outside the laboratory while at the same time retaining the goals of knowledge shared with laboratory science. Elements of this strategy were referred to through this case study (Lincoln and Guba 2000; Yin 2003). Yin (2003) suggested that logical positivism is a way in which case study research can be influenced by the emulation of the scientific method. Evidence is presented through the practical requirements of the operational pathway that used the following validity checks to contribute to scientific evaluation.

Yin (1994) presented four validity/reliability tests used to establish the quality of empirical social research. These four validity tests presented in Table 3.3 were used at the design and subsequent phases of this research. They included construct validity, internal validity, external validity and reliability and have been adapted to enhance the quality, truthfulness and rigor of this design.

Analysis of existing literature was used as a frame for the collection of RTP data. Analysis and conclusions were based on the data collected from this framework. Building and confirming RTP factors in this way aimed to contribute to a comprehensive understanding of RTP knowledge, based on a variety of theoretical, intellectual and social explorations and explanations (Denzin and Lincoln 2008). The credibility of this work is dependent on the credibility of the quality of data and analysis collection through rigorous methods (Golafshani 2003; Patton 2003). Yin's (1994) work was used to frame this analysis due to its completeness and ability to pay attention to validity and reliability from both diverse perspectives.

In summary, the purpose of this research is embedded within a qualitative case study design. Multiple ways of determining truth are proposed to assist in progressing RTP knowledge and illuminating and validating RTP factors. Table 3.3 outlines and defines the tactics applied in this study with a cross reference to the test criteria

Table 3.3 Case study validity tactics (Adapted from Cosmos Corporation, cited in Yin 1994)

Test	Tactic	Implementation phase
Construct validity	The development of an operational pathway that merged the work elements of causal comparative research from both qualitative and quantitative perspectives	Literature review
Trustworthiness	Investigation of literature to develop an operational set of measures that encourage objective judgements in data collection	Data collection phase
The establishment of correct operational measures for the concept being studied/ determines which data is to be gathered and how it is to be gathered	Using multiple sources of evidence including permanent product records, interviews, focus groups and surveys Establishing a chain of evidence (Yin 1994), whereby an external observer, a reader of the case study can follow the derivation of evidence from the research questions to the study conclusions in either a forward and reverse direction. Yin (1994) describes this principle to be based on a notion that is similar to criminal investigations	
Internal validity	Through pattern matching causal relationships are established	Design phase
Trustworthiness	Researcher bias acknowledgement	Data analysis phase
Establishing a causal relationship whereby certain conditions are shown to lead to other conditions		Used in explanatory rather than exploratory phase
External validity	Replication logic to establish consistency in approach both within and across each bounded system provides a domain to which the study's findings can be generalized	Research design phase
Trustworthiness	Use of six cases to generalize findings to theoretical assertions, to explore, explain and expand RTP knowledge. Ultimately providing significant RTP knowledge and a vehicle for examining other cases	
Establishing where findings can be generalized beyond the immediate case		
Reliability/dependability	Method and data triangulation through the use of the case study protocol and the development of a case study data base, data collection operations can be demonstrated and repeated to achieve the same results (Yin 1994)	Design phase
Demonstrating that the operations of a study can be repeated with the same results/minimize errors and biases	Clarify researcher bias	Data collection phase

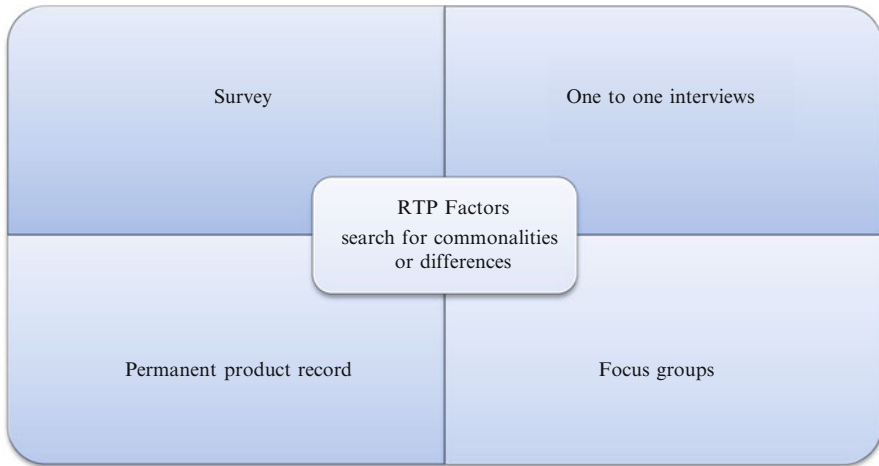


Fig. 3.3 Convergence of multiple data sources of evidence

and phase of implementation as a guide for those who may choose to employ a similar methodological approach.

In brief, Table 3.3 identifies the construct, internal and external validity and reliability as four validity tactics that were used in this research. These validity tactics commenced at the design phase and continued to be maintained throughout the study. The outlined construct validity tactics are identified in the operational pathway merging both qualitative and quantitative perspectives to add depth to the intersecting purpose of this case study investigation. This operational direction allowed for the development of a literature-based set of measures from previous research and commentary pieces to create objective tools and judgements in data collection. In order for construct validity to occur, the specific RTP gap contributing factors selected must have reflected the specific RTP gap factor information required. The use of multiple sources of evidence was used to establish convergent lines of inquiry. Figure 3.3 presents the convergence of sources of evidence to substantiate RTP facts. This approach was applied to each of the six case studies implemented in schools.

Research data was collected in the exploration phase through the thorough investigation of the literature. Themes from the literature were then used in the explanation and expansion phases to provide an investigative framework for instrument development and analysis, including the survey, interviews, permanent product records and focus groups. These multiple data collection methods assisted in controlling bias (Golafashani 2003) and were used in a mix of triangulation techniques to establish rigor. Davidson and McAllister's (2002) use of thick description provided detailed extracts to ensure authenticity was utilized to substantiate my understanding of data collected. Internal validity tactics were employed in the explanatory phase to investigate causal relationships. By establishing **how** factors contributed to project status, an explanation of **why** various factors contributed to the success or failure of research-based projects in practical applications were identified.

3.8.1.2 Employing Triangulation in Case Study Research

The use of data and method triangulation was selected as a source of external validity as it presented a way of crosschecking information and conclusions through the use of multiple procedures and sources. When the different procedures or sources are in agreement you have corroboration (Johnson 1997). It is equally important in triangulation to use the same procedures to detect discontinuity. The use of triangulation “strengthens a study by combining methods” (Patton 2001, p. 247). Triangulation was conducted through the use of the case study protocol, tightly geared to test RTP assertions. The range of data collection methods sought converging lines of inquiry to triangulate evidence to ensure a rigorous, trustworthy, reliable and valid investigation was conducted. The RTP knowledge collected through the review of the literature formed part of the methodology, making it possible to link the six cases to factors that had previously occurred. The triangulation of methods enabled causal comparative analysis to check the explanation of findings generated by the various data collection methods described. Both divergent and consistent findings provided an increased understanding of the complex nature of this phenomenon (Patton 2002, p. 559).

The triangulation of data sources was also employed as this approach enabled consistency of information collected at different times and with different participants to be checked. Data from individual interviews was triangulated with focus group and survey data. If this triangulation did result in consistency or commonalities, explanations for differences lead to further understanding of the phenomenon, giving increased credibility to results (Patton 2002). This use of methods and data triangulation intended to reduce bias and enhance reliability.

3.8.1.3 My Role as a Participant Researcher

A definition of a participant researcher and the strength and limitations of my researcher position as a participant within this work is presented. Insider/outsider perspectives in relation to researchers as research participants are also identified.

Through my cohort membership, I felt I was in the unique position of being able to view methods and data from both the researcher and participant perspectives. I shared similar experiences with the other participants and developed professional relationships with them. Given my role as the sole researcher and a research participant in this study, I am defined as a participant researcher (Bogdan and Biklen 2007). With this position come practical considerations, such as researcher bias. Researcher bias is acknowledged and addressed through the use of multiple sources of data collection, internal validity tactics such as the chain of evidence approach outlined in Table 3.3.

Glesne and Peshkin (1992) also referred to the role of “participant” as having the potential to become a trusted person with documentation and information access being more readily available. Dwyer and Buckle (2009) added to this perspective by introducing researchers as insiders and/or outsiders. The authors suggested that as

an ‘insider’, researchers could situate themselves within the research enhancing depth and breadth of understanding. Dwyer and Buckle (2009) proposed that an insider role status frequently allows researchers more rapid and complete acceptance by their participants. This added to openness and trust, may have increased the quality of data gathered. Although efforts were required to eliminate researcher bias, advantages of this position included understanding first hand how specific actions corresponded to words and outcomes, allowing me to understand and interpret responses more readily. Patterns of behaviour and actions became more readily evident as a relationship of trust may have motivated others to share details, which they otherwise may not.

As participant researcher I acknowledged that I commenced the study with pre-conceived ideas on RTP issues. Miles and Huberman (1994) discussed this concept by stating as researchers “we do have background knowledge” (Miles and Huberman 1994, p. 17). It was through this related knowledge that we comprehend situations, issues and details about the complex phenomenon under investigation.

Given my awareness of the advantages and challenges of my participant researcher position, I addressed these challenges by completing the data collection tools prior to administering them to others. I had an independent person ask me the interview questions. These were conducted prior to the other participant interviews to prevent my case results being influenced by others. I did not participate in the focus group activity in a participant’s capacity as other group members may have consciously or subconsciously expected me to lead the session. Focus group participants may have been less willing to offer suggestions or be altered by my responses or input. In brief an opportunity for participants to participate in a focus group without my participant input may have consolidated or expanded upon RTP themes, assertions and factors more effectively. Participants were given the opportunity to build on prior knowledge in order to extrapolate and validate RTP themes.

In summary the participant researcher position is identified and approaches selected to address this position to enhance this research design quality have been acknowledged. Through the use of diverse evidence sources, this research explored, explained, validated and expanded RTP assertions with a rich and extensive data collection and analysis effort using six case study exemplars. This approach provides a clear operational direction for the constructs of validity and reliability for replication across various contexts (Yin 1994). Fraenkel and Wallen (2006), and Wainer and Braun (1998) outlined approaches which presented ways to complement concepts of trustworthiness, quality and rigor (Lincoln and Guba 1985; Mishler 1986; Seale 1999; Stenbacka 2001), through the utilization of Yin’s (1994) case study validity tactics.

3.8.1.4 Acknowledging the Strengths and Limitations of Causal-Comparative Case Study

Following is a description of the strengths and limitations pertaining to this research design that was specifically designed to advance the knowledge of the factors fundamental to reducing the RTP in inclusive education.

Strengths

The exploration of existing literature guided the specific operational pathway through the causal comparative design to address this book's purpose. This process has identified concerns and presented ways to address them. As such the present design utilized features of diverse approaches, within the flexibility of case study design to strengthen its approach. Replication logic allowed for each case to follow the same operational pathways, using the data collection and analysis techniques. This encouraged consistency in approach across a spectrum of case perspectives, in search of differences or commonalities that resulted from examining RTP factors in practice.

The examination of multiple cases allowed more accurate conclusions about interorganisational factors, as contemporary events were measured when relevant behaviours could not be manipulated. There is a precedent as a number of multiple case study examples exist that provide an illustrative example of this approach (Corcoran et al. 2004; Roland et al. 2006; Stecker and Skinner 2006; Yin and Moore 1987).

Through employing a causal comparative case study approach researchers are able to deal with a full spectrum of evidence. This was considered advantageous for the purpose of this investigation, as it gave capacity for an in depth understanding of the factors that had contributed to the status of RBP's over a 3 year period both within and across cases.

Limitations

Concerns regarding the lack of rigor exist in the use of single cases to make concluding generalizations (Creswell 2003; Yin 2003). Hamel et al. (1993) and Yin (1994) have responded to the concern about the sufficiency of the number of cases by suggesting that relative sample size does not transform a multiple case into a macroscopic study, and that even a single case could be considered acceptable, provided it met the established objective. Procedures that positively contribute to these concerns now exist to assist case study researchers to satisfy the three tenets of the qualitative method being describing, understanding, and explaining (Yin 1994).

Increased time and resources in collecting and analysing multiple sources of data is required to gain a depth of understanding across multiple settings. These limitations have been considered; yet causal comparative case study remains suitable for this design as it allowed for factors to be retrospectively traced over time. The articulation and verification of why RTP factors occurred as they did, was sought through this comprehensive research strategy as it allowed for the in depth analysis required (Stoecker 1991, as cited in Yin 1994).

Fraenkel and Wallen (2006) highlighted two major concerns from a more quantitative perspective, being the lack of randomization and lack of control over threats to internal validity, as no manipulation of the independent variable was possible. Fitzpatrick et al. (2004) suggested that judgment or purposive sampling is success-

fully used in case studies where small groups are drawn to identify and explore particular issues. The total cohort of ten Masters Students was invited to participate in this research. Six of the ten who graduated from the same course in 2008 agreed to participate in exploring this RTP phenomenon. All six participants who shared the same graduate teacher experience were expected to devise a research-based program specific to the needs of their setting. The opportunity to study six distinct RTP exemplars that were crafted and implemented under similar conditions was unique, yet it may be considered a weakness as those circumstances may or may not align with the circumstances of other RTP efforts.

Location threat as defined by Freankel and Wallen (2006) in experimental studies, referred to the concerns of data collection location and details differing in each case. These concerns were reduced as the same data collector collected data under the same conditions. Standardizing procedures to establish rigor minimized data collector bias.

3.8.1.5 Data Collection Approaches

This section outlines the use of mixed data collection approaches in the light of the exploration, explanation and expansion purpose of this investigation. Methods of data collection employed throughout this research are briefly introduced. Table 3.4 presents each of the data collection tools with their respective strengths and limitations to highlight their position in the proposed operational pathway. A detailed description of each tool follows in the procedures section to support readers interested in implementing the described data collection approaches.

Five forms of data collection were employed throughout this research. These included; review and representation of the literature, a two-part survey, two individual interviews, focus groups and permanent product records (participants written Masters thesis'). Descriptions of each method are discussed later in the chapter. The use of this mixed methods approach is especially applicable to the phenomenon under investigation, as it allowed flexibility in data collection methods and interpretation of both data and real life situations (Stake 1995). These dimensions of mixed methods of data collection lent themselves to the desired depth of data required to address the purpose of this research.

The central research question for this study was answered through a series of sub questions that were initially drawn from the literature into the outlined exploration, explanation and expansion phases. The exploration phase was divided into two parts and investigated the factors identified in previous literature that contributed to sustaining RBP and whether these factors have been validated through empirical research. The review of the literature initially identified key RTP areas, claims and validation techniques, prior to a deeper analysis of each of the acknowledged areas. The results of this two-part literature exploration strategy are presented in the litera-

ture review in Chap. 2. The methodology permitted modification of research questions from phase to phase based on the findings even though the data collection methods were planned (Ezzy 2002). This process used one data source to strengthen the next.

The second part of the exploration phase investigated responses to semi-structured interviews and Part one of a two-part survey. This required participants to outline their original (non influenced by literature) understandings of the factors that contributed to the status of the projects in their setting. Part two of the survey was also distributed and then collected 1 week later. Part two of the survey used RTP factors identified through literature to elicit project details and responses from participants about the status of their projects.

The explanation phase utilized Permanent Product records, semi-structured interviews and focus groups to establish a deeper understanding of how these factors identified in the exploration phase contributed to project status in practical applications. During the expansion phase, analyses of responses collected from part one of the survey, Permanent Product records, semi-structured interviews and focus group discussion, were used to establish whether any other factors contributed to the project status.

Although these data collection methods were planned, it is worth noting that Ezzy (2002) recommended the flexibility in design allows for the modification of these tools if required. This process built on the strengths of qualitative methods as it allowed such decisions to be made in a more fundamental way than if analysis was left until after all data collection was completed. Descriptions of each of the planned data collection methods with associated strengths and limitations are identified in Table 3.4.

Table 3.4 Data collection tools, advantages and limitations (Adapted from the work of Creswell 2003)

Data collection tool	Implementation phase	Advantages	Limitations
Literature review	Exploration/ confirmation	Beneficial in recording relevant information at convenient times	Requires the research to search out and filter through relevant literature
		Useful in exploring information previously discussed	Quality of the literature not evaluated empirically
		Builds on prior work on the RTP gap knowledge	Time consuming
		Encourages direction and relevance	

(continued)

Table 3.4 (continued)

Data collection tool	Implementation phase	Advantages	Limitations
Two phased survey	Exploration/ explanation	Provides measurable data to set questions	Dependent on subjects' capacity to articulate meaning in a written response
		Allows for direct comparison of cross case written analysis	Responses may be limited and time consuming
		Second part can be completed at leisure within personally selected comfortable locations	Body language and other subtleties can't be detected
		Allows for a second phase of interview to build on initial written responses	Responses are limited to the questions
Permanent product records	Exploration/ explanation/ expansion	Enables the researcher to gain information that participants had written closer to the time of the program implementation	Materials may be incomplete and vary in detail and accuracy levels
		Can be accessed at a convenient time	Requires approval from participants
		Saves time and transcribing expenses	
		Address some ex post facto concerns, as records were kept as events unfolded	
Interviews (open-ended interview will occur initially with the data gathered being used to inform the following semi structured interview)	Explanation/ expansion	Beneficial when direct observation is not possible, suited to ex post facto	May be considered indirect information, filtered through views of interviewees
		Can build on previously collected details	Researchers presence may bias responses
		Allows for questioning to be directed to gain deeper understanding	People vary in their ability to articulate perspectives in interview format
		Body language and gestures can be observed	
Focus groups	Explanation/ expansion	Beneficial when direct observation is not possible, suited to ex post facto	Can be dominated by one voice and reluctance to speak in an open forum
		Provides a forum for open in-depth shared discussion	May be considered indirect information, filtered through views of interviewees
		Body language and gestures can be observed	Researchers presence may bias responses

3.9 Analysis of the Data

The review of literature was used to guide the development of the data collection tools that were used as a framework for collecting multiple sources of data from six individual participants. By reflecting on key RTP findings from relevant literature, the parameters by which data was to be interpreted were defined (see Chap. 2). Such an approach to data analysis is referred to by Yin (1994) as a dominant mode of analytical analysis titled *theoretical propositions*.

3.9.1 Theoretical Propositions

The theoretical assertions identified in relevant RTP literature, provided a framework to guide this case study. Lincoln and Guba (1985) suggested that the benefit from a systematic review of literature, can include having a frame to check the soundness of interpretations and having a solid base to create an emergent map of what it all means. Through identifying theoretical assertions, theoretical propositions have been formed (identified in Table 3.2) and were used to analyse data within individual cases and across them. This form of analysing case studies is an effective way “of laying the groundwork for high quality case studies” (Yin 1994, p. 125). It was through the identified theoretical propositions that the need to conduct this case study research was recognized. Research questions and the design of this exploration, explanation and expansion research were all directed by these RTP theoretical propositions.

The predominant analysis step in this case study research was using propositions. The use of propositions was used as a guiding term of reference to direct data collection and as criteria for interpreting findings (see Table 3.2). As previously identified, Yin (1994) described proposition formation as a tool or a way of keeping the investigations on track. As this set of proposals was based on theoretical underpinnings, they had the capacity to directly link research questions to data collection and analysis, streamlining the present investigation.

Other processes of analysis involved employing methods to interpret the information shared by participants. This interpreting of participant accounts is referred to as examining the parts of a work to discover deeper meanings. Categorizing the data to extrapolate themes and provide possible explanations are other analysis processes that were employed (Glesne and Peshkin 1992; Miles and Huberman 1994; Stake 1995; Yin 1994). These processes were applied to permanent product records, interview transcripts and focus group responses.

Yin’s (1994) pattern matching logic was merged with components of Campbell’s (1975) pattern matching techniques. This was done through comparing theoretical assertions with the real life RTP experiences and knowledge of each case. Several pieces of information (survey, interviews, focus groups and permanent product records) from the same case were related to the theoretical propositions. “If the pat-

terns coincide, the results can help a case study strengthen its internal validity” (Yin 1994, p. 106). The convergence of these results was triangulated to further consolidate themes in relation to the propositions (see Fig. 3.3). The replication approach outlined in Fig. 3.2 was derived from the work of Yin et al. (1983) and assisted in maintaining consistency in application and analysis.

3.9.2 Procedures Overview

3.9.2.1 Snapshot of Methodological Details from Which RTP Knowledge Was Generated

This section builds on the framework, decisions and definitions identified through this chapter. It provides the specific details pertaining to participants, settings, data collection tools, procedures and analysis.

Participants

Six teachers from a special education division of a Western Sydney based non-government school system participated in this study. These teachers were also students enrolled in the pilot version of the Master of Education (Inclusive Education) at Charles Sturt University. The participants in this Master’s cohort graduated in 2008 and ranged from kindergarten teachers to a high school special education teacher. All participants shared the same graduate teacher experience and were expected to devise and implement a research-based project specific to the needs of their setting. All graduates from the cohort were asked to participate in this study. Five cases were joined by my case, with the difference of my role as the participant researcher being noted. Data collection commenced 1 year after graduating from the distance inclusive education Masters program. See Table 4.1 in the results section for participant details.

The Settings

The projects were set in school-based sites across Sydney. Sites included three primary schools and one, single gender high school. All projects were implemented in 2006, with data collected on project status at three annual intervals from 2006 to 2008. The distance between schools span a 70-km radius, and included diverse socio-economic population and family structures. Implementation sites comprised of students from both single-parent and dual parent families with a wide range of incomes and living conditions. Detailed accounts of the particulars that are specific to each case setting are presented in the results section as this data was collected through the exploration phase.

Phased Research Questions

The central and sub questions from the study, in Table 3.5, highlight the three phases of the investigation. The central question is presented at the top of Table 3.5, followed by sub questions with selected data collection methods displayed. The questions identified in Table 3.5 were further developed as a result of the survey and interview responses, which elicited participants perspectives of literature based factors contributing to the status of their projects.

The three distinct exploratory, explanatory and expanding phases of this research provided a structure for the sequence of the investigation and data collection methods used to respond to each research question. Table 3.3 detailed the features of the design that aligned closest to Yin’s (1994) multiple explanatory case study design. The investigation of six individual bounded cases provided the opportunity to examine trends and strengthen explanations of how and why factors exerted influence in closing the RTP gap. Given the limited empirical evidence currently available on RTP factors, the exploration of assertions and related research-based knowledge was necessary prior to the explanation and expansion phase. The multiple methods of data collection provided a diverse and solid depth of understanding of RTP factors and contributed to the prevention of errors or distortions in analysis and conclusion. The use of multiple data collection tools contributed to more reliable

Table 3.5 Multiple causal comparative case study design research questions and overview

What are the factors <i>and relationships between them</i> that contributed to the status of research-based projects in inclusive education settings?	
Exploration phase	Sub questions that were reflective of those used in interviews and focus group
	1a. What factors have been identified in RTP, PD, TE, CSR and CBAM literatures that contribute to sustaining RBP in inclusive educational settings?
	1b. To what extent were these factors been validated through empirical research?
	1c. What are the major RTP themes that have been identified through these literatures? (Literature review)
Designed to gain an account of RTP beliefs prior to introducing themes identified through the literature	2a. What RTP factors were initially identified by participants prior to literature based themes being revealed? (Open-ended interview)
Explanation phase	3. Which factors identified in previous RTP, PD, TE, CSR and CBAM literature have contributed to the status of your project?
	4. To what extent have these factors contributed to the status of your project? (Survey part 2)

(continued)

Table 3.5 (continued)

What are the factors <i>and relationships between them</i> that contributed to the status of research-based projects in inclusive education settings?	
Explanation phase confirmation	5. How do aspects of collaboration (emergent feedback, joint ownership and responsibility, collegiality, increased communication, positive peer and student responses) contribute to the status of RBP in inclusive education settings?
	6. How does the responsiveness of research (research relevance, usability and trustworthiness, responsiveness to organisational demands, practical difference, increased teacher contribution, systemic technology, comprehensiveness, school level design) contribute to the status of RBP in inclusive education settings?
	7. What support features (time, resources, consistency, networks, emergent feedback, well developed materials) contributed to the status of RBP in inclusive education settings? How?
	8. What features of a TE program contribute to RTP (framed conceptually, theoretical basis, replication of form, subject structure) in inclusive education settings?
	9. Did you experience these?
	<i>Additional question established after the analysis of the data collection through the exploration and explanation phases- How have the identified relationship between factors exerted an influence on the practical application and sustainment of the projects?</i>
	(Permanent product records, semi structured interviews)
Explanation phase confirmation	5. How do aspects of collaboration (emergent feedback, joint ownership and responsibility, collegiality, increased communication, positive peer and student responses) contribute to the status of RBP in inclusive education settings?
	6. How does the responsiveness of research (research relevance, usability and trustworthiness, responsiveness to organisational demands, practical difference, increased teacher contribution, systemic technology, comprehensiveness, school level design) contribute to the status of RBP in inclusive education settings?
	7. What support features (time, resources, consistency, networks, emergent feedback, well developed materials) contributed to the status of RBP in inclusive education settings? How?
	8. What features of a TE program contribute to RTP (framed conceptually, theoretical basis, replication of form, subject structure) in inclusive education settings?
	9. Did you experience these?
	<i>Additional question established after the analysis of the data collection through the exploration and explanation phases- How have the identified relationship between factors exerted an influence on the practical application and sustainment of the projects?</i>
	(Permanent product records, semi structured interviews)
Expansion phase	10. What factors other than collaboration, responsiveness of research, PD, TE, resource, environmental and change process support, scientifically based practices, scalability and educational power contribute to the status of RBP in inclusive education settings?
	11. How have these additional factors been identified?
	<i>Additional question established after the analysis of the data collection through the exploration and explanation phases- what were the differences and consistencies in the relationships between the RTP factors that contributed to the status of the projects that were identified by the research participants?</i> (Survey, Permanent Product records, interviews, focus group)

Table 3.6 Data collection sequences and details

Sequenced data collection methods	Approximate time required	Recording technique	Details
1. Open ended interviews	60 min	Digital voice recorder	One to one interview
2. Two part survey	65 min	Written responses	Each participant completed both parts
3. Semi structured interviews	60 min	Digital voice recorder	One to one interview
4. Focus group	60–75 min	Video and digitally voice recorded	Five participants and a participant researcher
5. Permanent product record	On-going	Collection of previous written responses	One per participant

conclusions, adding to the robustness of theory (Yin 1994). The section that follows describes the data collection and their features that directly respond to the research questions in Table 3.7.

3.9.2.2 Data Collection Sequence

Table 3.6 provides an overview of the data collection sequence and related details. Open-ended interviews were initially conducted to gain each participant's thoughts prior to any literature-based questions being presented. The two-part survey was then distributed and collected the following week. Semi-structured individual participant interviews followed the collection of part two of the survey. This allowed semi-structured interview questions to be derived from the survey and initial interview data. Analysis of permanent product records occurred throughout this data collection phase. A focus group session with all participants was the final data collection event. All participants met in the same location (away from their schools to ensure privacy) for all interviews and the focus group session.

The content of three of the five data collection tools were derived from literature-based RTP assertions and used participant responses to develop questions. Table 2.1 outlined the development of these literature-based assertions. It also provided parameters for the confirmation and explanation of data collected through part 2 of the survey, the semi structured interviews and focus group. As noted previously, each phase of this data collection was used to inform the next. The first part of the survey and the open-ended interviews sought participant's original responses, prior to the introduction of any literature based categories.

The adaptability of case study design allowed the use of mixed data collection methods. While the sample size was small, the survey provided Likert scale data and the employment of focus groups and interviews enabled the researcher to get closer to the focus of the study. The combination of these approaches through the flexible case study design developed an "in depth subjective understandings of people, situations and key episodes" (Hitchcock and Hughes 1995, p. 318).

Table 3.7 Consistency and development of RTP literature based themes and related factors

RTP	PD	TE	CSR	CBAM
Collaboration	Collaboration	Collaboration	Collegiality	Collaboration
Shared responsibility, understanding and ownership (1.2)	Joint partnerships (1.11)	Joint partnerships (1.11)	Need for complete theory framework (4.1)	Shared ownership of the elements involved in and resulting from the change process (1.6)
Collegiality (1.11)	Mutually identified boundaries, structures and purposes (1.4)	Involving practitioners in the research process (1.13)	Intersection of process and content (4.4)	Shared acknowledgement of changing needs of stakeholders and environments (1.10)
Mutual respect (1.3)	“Buy in” from all stakeholders (1.16)	Multiple level feedback (1.12)	Adequate and complete design (4.3)	Understood by all
Cooperation (1.6)	Engagement in pursuit of genuine	Responsive, cohesive course structures (4.6)	Self reinforcing (3.2)	United (1.15)
Communication (1.1)	questions, problems and solutions (1.5)	Mutually aligned norms, expectations and roles (1.8/4.5)	Well aligned system and policy goals (1.7)	Awareness of shared ownership and individual strength (1.9)
Substantive frequent interaction (1.1)		Critical in developing links between theory and practice (1.14)		
Feedback (1.12)		Consistency (4.2/4.7a) Flexibility (4.8)		
Resource support and PD	Support	Support	Supportive environments and structures	Support through change
Adequate materials (2.1)	Teachers need to feel sufficiently prepared (2.7)	Addresses teacher enthusiasm and concerns (2.13)	Emergent feedback (2.10)	Sustained assistance (2.9)
Adequate time (2.2)	Networks (2.12)	Awareness of fatigue and exhaustion (2.11)	Evaluation as an emergent function rather than an add on (2.21)	Support structures must change as needs change (2.5)
Long term (2.3)	Sufficient instructional time (2.22)	Support personnel qualities and attributes (2.25)	Use of systemic technology (2.26)	Beyond individuals (2.16)

(continued)

Table 3.7 (continued)

RTP ⇨	PD ⇨	TE ⇨	CSR ⇨	CBAM
Collaboration	Collaboration	Collaboration	Collegiality	Collaboration
Positive attitude from students and peers (2.14/2.15)	Adequate resources (2.22)	Need for theory to make TE more coherent (4.1)	Long term and consistent (2.3/2.9)	From multiple agencies, levels and agendas (2.16)
Well developed student materials (2.4)	Ongoing stakeholder support and assistance (2.8)	Adequate depth and time to research-based practices (2.19)	Well developed student materials, teacher manuals, assessment and training (2.1/2.4)	Within realistic time frames (2.2)
Professional development (2.7)	Limiting competing demands to achieve a balance of multiple agendas (2.11)		Professional lives acknowledgement of the need for recognition and reward (2.17)	
Consistent (2.9)	Scientifically-based instructional practices		Instructional leader support for the project (2.26)	
Address needs (2.8)	Evidence-based and proven to be effective (2.24)			
Active teacher involvement (2.23)	Central to students learning (2.20)			
Review research to increase research knowledge (2.24)	Viewed as credible by teachers (2.18)			
	Comprehensive (3.19)			
Responsiveness of research	Responsiveness	Responsiveness of University Education Programs	Scalability and educational power	Research-based change process
Useable (3.1)	PD programs must respond to genuine teacher needs and concerns (3.11)	Joint partnerships (1.11)	Use of scientific research (3.3)	Responds to personal growth in knowledge and skills (3.17)

(continued)

Table 3.7 (continued)

RTP ⇨	PD ⇨	TE ⇨	CSR ⇨	CBAM
Collaboration	Collaboration	Collaboration	Collegiality	Collaboration
Practical (3.7/3.22)	Reflective of student and staff needs (3.6)	Research-based (3.3)	Validated with scalability potential (3.13)	Process not an event (3.18)
Accessible (3.7)	Responds to classroom contexts and organizational demands (3.12)	Effective delivery (4.7b)	Joint partnerships (1.11)	Change is a highly personal experience (3.17)
Trustworthy (3.3)	Consistency (4.11)	Good contextual fit (3.14)	School level design for school level influence (3.19)	PD should occur over time and be dynamic in addressing varying participant needs and abilities (3.10)
Evidence-based (3.3)		Valued by students (3.15)	Effective adoption (3.16)	
Manageable and efficient (3.2)		Address real life needs and concerns (3.8)	Self reinforcing (3.20)	
Examined in rich contexts (3.4)		Need for opportunities and time for practical development of classroom based skills and knowledge (3.9)		

Literature Used as a Framework for the Investigation of Factors That Contributed to the Status of Research-Based Projects

An investigation of related literature was the initial strategy utilized to begin this research. It also provided a framework for all subsequent decisions and analysis. According to O’Leary (2004) such an approach identifies tangible issues in relation to theory. It informs readers of developments in the field, generates ideas for measuring assertions and provides a method to critically evaluate methods that may identify shortcomings prevalent in literature. The investigation of literature identified an urgent need to link research-based knowledge and practical application. Commentary pieces and assertions based on intervention work were used to frame and provide scope for the study to confirm and build on the well-documented RTP concerns. The findings of the review of the literature have been presented in Chap. 2. The search commenced with RTP literature that was predominantly based on commentary claims. As a result PD, TE, CSR and CBAM literature was investigated to gain a deeper understanding of additional RTP factors. Consistent themes and key

factors that were supported and further developed across five bodies of literature were used to develop relevant research questions (see literature review, Chap. 2). Data collection methods including a detailed survey were developed to test these factors in practical application.

Table 3.7 identifies the commonalities within and across RTP, PD, TE, CSR and CBAM literature that were articulated in the review of the literature. It confirms consistency across the areas of literature and links key literature based assertions from each of these areas to the corresponding survey questions (See Appendix 1). The numbers with each factor correspond to the survey questions that were developed as a result of the reviewing the literature. Table 3.7 has been included in this methodology chapter as it identifies how the literature was used to inform the data collection method. The recognition of factors and development of these themes across the bodies of literature reviewed was crucial to the purpose of this study and as a result they were used as a theoretical framework for the collection of data for subsequent phase.

3.9.2.3 Interviews

Open-ended and semi-structured interviews were conducted on a one-to-one basis in a conversational style. Semi-structured interviews were designed to elicit spontaneous, relaxed responses to a number of open-ended items pertaining specifically to participants' experience and project details. All participants were asked the same set of questions beginning with easy to answer questions to build participant's confidence in the interview process. These semi-structured and efficient forms of the qualitative interviewing techniques are beneficial when comparing the responses of different respondents. The interviews were conducted in the same location to ensure a relaxed, comfortable and quiet setting and took between 60 and 75 min to complete. As previously mentioned the semi-structured interview questions were informed by survey and initial open-ended interview responses.

All interviews were audio taped (with participant permission) due to its ease and cost effectiveness. A small audio recorder is less obtrusive than a video recorder in a one to one interview situation and adds the nuances of a person's voice to the printed words. Audiotaping allowed for analysis through repeated studying as well as checking accuracies against notes and transcripts.

3.9.2.4 Survey

A two-part survey was purposefully designed for this study. Part one of the survey consisted of three components pertaining to personal, setting and program details. Along with items that generated descriptive information, open-ended questions were included in part one of the survey to elicit responses not influenced by literature.

The second part of the survey was divided into an implementation integrity section and a research driven investigation section. The implementation integrity section sought to determine if the selected program was conducted according to specified guidelines. The research driven section used literature-based themes to investigate specific program details and decisions. The literature review in Chap. 2 identified the development and consistency of RTP factor assertions within and across five bodies of literature. Table 3.7 displays the numerical link to specific questions in the survey that address these literature-based assertions. The approach used the literature-based knowledge as a method to devise the tools to collect the data throughout this investigation.

3.9.2.5 Focus Groups

The structure of the focus group and questions were dependent upon the responses gained from the survey and semi structured interview. They provided an opportunity for in depth discussion around relevant themes including supportive environments, responsiveness of research and collaboration. They were not limited to these criteria as additional RTP factor responses were encouraged through the expansion phase of this research.

A focus group was conducted after the collection the survey and the completion of both interviews. This provided an open forum for discussion for five out of the six participants and took approximately 70 min to complete. The focus group was efficient because the perspectives of all participants could be gathered at one point in time. Albeit this may also be considered a limitation as one participant may influence another. This was addressed through the opportunities provided in the exploration and explanation phases to gather data from individual participants.

As participant researcher, I facilitated and guided the flow of the session and was on hand to address group dynamic problems if they had occurred. The focus group was video taped to display the context, verbal interaction and non-verbal elements such as gestures, facial expressions and pauses. With the increased number of participants it was hoped that after a short while they would relax and become less conscious of the video recorder. This process once again allowed for repeated studying of the session and cross checking against notes and transcripts.

3.9.2.6 Permanent Product Record

Permanent product records of the six participants' were used to provide an additional source of information on project planning, implementation and outcome-related details. These details included the needs of the setting, target subjects, aims of the project, implementation integrity, modifications and success rates. The permanent product records are the completed assignment documents that were presented for marking at the culmination of the Master of Education degree. They were not produced for the purpose of later research, yet they added specific and

comprehensive contextual details about the nature and outcomes associated with the RTP projects. These documents were written shortly after the projects implementation and provide time specific details.

The decision to use permanent product records was made after considering the “cost/benefits ratio” (Cohen et al. 2000, p. 50). This ratio referred to the fact that the records currently exist and no additional demands need to be placed on researchers as professionals in the pursuit of the truth. Participants all agreed to release their project documents, so these documents were consulted at regular intervals, at convenient times and contributed to the convergence of evidence. Given that this investigation is an ex-post facto design, the use of permanent product records addressed the time delay threat as it presents data that was gathered at a particular point in time.

3.9.2.7 Ethical and Methodological Implications

Time concerns in completing the survey and participating in semi structured, open-ended interviews and focus groups was considered a burden to participants. Allowing ample time to complete tasks and building a schedule that was sensitive to the commitments of the participants responded to this risk. Approximately 1 h was required from each participant to complete the survey, with an additional hour for the focus group session, open-ended and semi-structured interviews. Confidentiality and privacy was exercised through the use of pseudonyms. All documents and recordings are securely stored in a locked cabinet and will be destroyed after 5 years.

Concerns related to my role as a participant researcher have been previously outlined. The initial completion of tools assisted in addressing these concerns. Asselin’s (2003) insider-outsider researcher work adds to participant researcher risk awareness. Suggestions that role confusion can occur if the researcher is familiar with the participants through a role other than that of a researcher are valid. Clear participant and researcher roles and the use of an interviewer to conduct my interviews assisted in catering for these concerns. Breen (2007) suggested that ethical issues that arise from insider research often lack guidelines and need to be dealt with on an individual basis. Ethical principles of privacy, confidentiality, signed consent and non-maleficence guided additional ethical considerations. Decisions regarding these areas were presented in the participant researcher section.

3.9.2.8 Recording of Responses

All recordings from interviews and focus groups were transcribed. Participants were asked to validate the accuracy of their transcript and clarify unclear responses.

Due to my position as a member of the graduate teacher cohort I took on the role of a participant in this study. Given that I am also the sole researcher an independent external observer was asked to read the case studies to reduce possible bias that could have been created due to my participant researcher status. By following the

derivation of evidence from the research questions to the study conclusions in either a forward and reverse direction, bias elements were reduced (Yin 1994). This process allowed me to participate in discussions that responded to the research questions.

Both the interviews and focus group approach provided an opportunity for participants to add further clarification and understanding of themes central to the research question and sub questions. Analysis of this data was compared to participants survey responses in order to determine if any correlation of factors that influenced the practical application, sustainment or extinction of the project existed.

In brief, three data collection-gathering occasions occurred after the initial investigation of literature. The first comprised of an open-ended interview and Part 1 of the survey. This comprised the exploration phase of the study and elicited responses prior to RTP literature based themes were introduced. Once findings from this exploration phase were analysed, a second data collection phase, including Part 2 of the survey and semi structured interviews followed. Part 2 of the survey served to generate individual responses to a rating scale derived from the RTP factors identified through the literature. The semi structured interview utilized questions based upon the initial interview and survey findings. The latter comprised the explanation phase and sought to determine any other RTP factors not asserted in the literature and how these factors contributed to the status of research-based projects. This second occasion also contributed to the expansion phase as opportunities for the identification of additional RTP factors existed and the relationships among those factors. The focus group was informed by all previous data collection opportunities and represents the final data-gathering occasion. Collectively these data gathering opportunities combined to gain details pertaining to the exploration, explanation and expansion of RTP factors across diverse implementation settings. The following chapters present the results collected through the data collection procedures outlined as part of the methodological approach described.

Key Points

- It is essential to seek, comprehend and analyse the depth of the methodological elements presented research reports. These details represent a lens with which to evaluate the quality of *research-based products and projects*.
- Although research can be approached in many different ways within and between disciplines, it is important to be a critical consumer as a well written report doesn't always reflect quality in the methodological decisions and rigor.
- Look critically at the specifics of the research and consider the possibilities and expectations of research in any field. Look for bias and limitations and ensure that the hypothesis/research questions align with the data collection and analysis techniques implemented.
- Every stage should be explained and justified to provide the logic behind your decisions.
- It is essential to comprehend the authenticity of research and the alignment of its elements. Understanding these active ingredients is essential to evaluating the quality of the practical implementation elements of research projects.

- These ingredients are critical to the processing of knowledge and evaluating the quality of the research base. In brief being armed with the ability to comprehend methodological details and decisions ensures the programs we implement are actually what they claim to be.
- This chapter provided readers with a detailed account of the methodological decisions used to guide this study in an effort to reduce the disconnect that may exist between those who create the evidence and those who are positioned to implement the research findings.

Tips to Assist in Becoming an Informed Consumer of Research and Evaluating the Strength of Research Studies

Asking the following questions should assist in determining credibility of research:

1. Is the author formally educated and experienced in the topic?
2. Does the author work in sales or for a university or research center?
3. Are sources correctly cited or does the author claim “studies were conducted?”
4. Does the author’s evidence support statements made?
5. Is the work based on strong objective research rather than a passionate personal narrative?
6. Does it come from a peer-reviewed publication?
7. What is the research question?
8. Who are the participants? Do they represent a cross section?
9. Does the research design match the research question?
10. How was the study conducted?
11. How is the data collected and analysed?
12. Are there contending explanations for the results?

Remember that a strong persuasive writing doesn’t necessarily ensure that the research presented is valid. A set of guidelines must be addressed to ensure the research is valid and not bias. This chapter presented a thorough description of the key areas that should be thoroughly considered and addressed when conducting or evaluating quality research.

References

- Asselin, M. E. (2003). Insider research: Issue to consider when doing qualitative research in your own setting. *Journal of Nurses in Staff Development, 19*(2), 99–103.
- Bain, A. (2007). *The self-organizing school: Next generation comprehensive school reforms*. Lanham: Rowman & Littlefield Education.
- Bertram, T., & Pascal, C. (2002). *International review of curriculum and assessment frameworks: Early years education: An international perspective*. London: Qualifications and Curriculum Authority (QCA).

- Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods*. Boston: Pearson International.
- Breen, L. (2007). *Silenced voices: Experiences of grief following road traffic crashes in Western Australia*. Unpublished doctoral thesis. Perth: Edith Cowan University.
- Campbell, D. T. (1975). Degrees of freedom and the case study. *Comparative Political Studies*, 8(1), 178–191.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). New York: Routledge.
- Corcoran, P. B., Walker, K. E., & Wals, A. E. J. (2004). Case studies, make-your-case studies, and case stories: A critique of case-study methodology in sustainability in higher education. *Environmental Education Research*, 10(1), 7–21.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks: Sage Publications.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks: Sage Publications.
- Datta, L. (1990). *Case study evaluations*. Washington, DC: US Government.
- Davidson, B. J., & McAllister, L. (2002). An introduction to qualitative research approaches. *Acquiring Knowledge in Speech, Language and Hearing*, 4(1), 28–31.
- Davis, B., & Sumara, D. (2006). *Complexity and education: Inquiries into learning, teaching and research*. Mahwah: Lawrence Erlbaum Associates.
- Denzin, N. K., & Lincoln, Y. S. (2008). *Strategies of qualitative inquiry* (3rd ed.). Los Angeles: Sage Publications.
- Dwyer, S. C., & Buckle, J. L. (2009). The space between: On being an insider-outsider in qualitative research. *International Journal of Qualitative Methods*, 8(1), 54–63.
- Ezzy, D. (2002). *Qualitative analysis: Practice and innovation*. Crows Nest: Allen & Unwin.
- Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2004). *Program evaluation: Alternative approaches and practical guidelines* (3rd ed.). Boston: Pearson.
- Forlin, C., Kawai, N., & Higuchi, S. (2015). Educational reform in Japan towards inclusion: Are we training teachers for success? *International Journal of Inclusive Education*, 19(3), 314–331.
- Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education* (6th ed.). Boston: McGraw-Hill.
- Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction*. White Plains: Longman.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597–607.
- Gore, J. M., Griffiths, T., & Ladwig, G. (2004). Towards better teaching: Productive pedagogy as a framework for teacher education. *Teaching & Teacher Education*, 20(4), 375–387.
- Hamel, J., Dufour, S. P., & Fortin, D. (1993). *Case study methods*. Newbury Park: Sage Publications.
- Herriott, R. E., & Firestone, W. A. (1983). Multisite qualitative policy research: Optimizing description and generalizability. *Educational Research*, 12(3), 14–19.
- Hitchcock, G., & Hughes, D. (1995). *Research and the teacher* (2nd ed.). London: Routledge.
- Janney, R. E., & Snell, M. E. (1997). How teachers include students with moderate and severe disabilities in elementary classes: The means and meaning of inclusion. *Journal of the Association for Persons with Severe Handicaps*, 22(3), 159.
- Johnson, G. M. (1997). Teachers in the inner city: Experienced-based ratings of factors that place students at risk. *Preventing School Failure*, 42(1), 19–26.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills: Sage.
- Lincoln, Y. S., & Guba, E. G. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 163–188). Thousand Oaks: Sage.
- Maxwel, J. A. (2004). Causal explanation, qualitative research, and scientific inquiry in education. *Educational Researcher*, 33(2), 3–11.

- Merriam, S. B. (1998). *Qualitative research and case studies applications in education*. San Francisco: Jossey-Bass Publications.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (3rd ed.). Thousand Oaks: Sage Publications.
- Mishler, E. G. (1986). *Research interviewing: Context and narrative*. Cambridge, MA: Harvard University Press.
- Morrison, K. R. B. (2002). *School leadership and complexity theory*. London: Routledge Falmer.
- O'Leary, Z. (2004). *The essential guide to doing research*. London: Sage.
- Patton, W. (2001). Career education: What we know, what we need to know. *Australian Journal of Career Development, 10*(3), 13–19.
- Patton, M. Q. (2002). *Qualitative evaluation and research methods* (3rd ed.). Thousand Oaks: Sage Publications.
- Patton, M. Q. (2003). *Qualitative evaluation checklist*. Michigan: Western Michigan University.
- Roland, W. S., Daniel, J. L., Armin, W., Alexander, I. W., & Michael, S. (2006). Transdisciplinary case studies as a means of sustainability learning: Historical framework and theory. *International Journal of Sustainability in Higher Education, 7*(3), 226–251.
- Seale, C. (1999). *The quality of qualitative research*. London: Sage Publications.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks: Sage Publications.
- Stecker, P. M., & Skinner, M. E. (2006). Using curriculum-based measurement to monitor reading progress in inclusive elementary settings. *Reading & Writing Quarterly, 22*(1), 91–97.
- Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision, 39*(7), 551–555.
- Tomlinson, C. A. (2004). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Alexandria: Association for Supervision and Curriculum Development.
- U.S. General Accounting Office. (1990). *Program evaluation and methodology division: Case study evaluations*. Washington, DC: U.S. Government Printing Office.
- Wainer, H., & Braun, H. I. (1998). *Test validity*. Hillsdale: Lawrence Erlbaum Associates.
- Yin, R. K. (1993). *Applications of case study research*. Thousand Oaks: Sage.
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks: Sage.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks: Sage Publications.
- Yin, R. K., & Davies, D. (2007). Adding new dimensions to case study evaluations: The case of evaluating comprehensive reforms. *New Directions for Evaluation, 113*, 75–93.
- Yin, R. K., & Moore, G. B. (1987). The use of advanced technologies in special education: Prospects from robotics, artificial intelligence and computer simulation. *Journal of Learning Disabilities, 20*(1), 60–63.
- Yin, R. K., Bateman, P., & Moore, G. (1983). *Case studies and organizational innovation: Strengthening the connection*. Washington, DC: Cosmos Corp.

Part II

Research and Practice Paradigms

Educational Research Is a Shared Commitment Between Dedicated Teachers and Motivated Researchers with Common Goals and High Expectations

Making the Case

Part I outlined the benefits and complexities associated with the global goal of implementing and sustaining research based practices in our schools and classrooms to enhance student success. It also highlighted the importance of methodological decisions and explicit details about the operational pathway fundamental to maintaining the integrity and validity of research. It provided a context for this work and specifically highlighted the need for teachers to be informed consumers of research, and for researchers to be informed and responsive to the needs of teachers and authentic classroom realities.

The following four chapters demonstrate how the RTP knowledge identified in Part I was used as a framework to directly examine the active ingredients critical to research becoming practice or research becoming extinct in real classroom settings. Part II outlines how the results collected through six individual RTP cases (across the three phases of this study) identified, validated and expanded upon direct links between research and practice and the evolving relationships between them. The comprehension of the RTP experiences becomes increasingly stronger through the staged collection of knowledge, which is described in detail in this section. In essence, Part II represents the results of this investigation and highlights what is substantial to research becoming practice in classroom applications. It identifies barriers and enablers to translating research into practice and informs a detailed RTP Model which is introduced in Part III.

The collection of responses from six individual teacher participants was derived from the phased data collection tools that were generated from 40 years of RTP literature (see Chap. 2). Together the results of the study promote the continuous cyclic application of research knowledge to strengthen practice and practice knowledge to strengthen research in mutually reinforcing ways. Part II is organized into the following chapters that:

- Introduce and describe each of the six cases, including researcher background, setting, their research foci, quality of implementation, and status of the projects at the end of each academic year over the study (Chap. 4)
- present a summary of the literature review (Chap. 2) conducted as part of the **exploration phase** of the study. The literature was used to inform data collection methods to identify those factors that contributed to the status of research-based projects in classroom applications. The same methods were used to collect data across all cases. This assisted in identifying the similarities and differences across cases (Chap. 5)
- presents the information participants shared about why and how individual projects were implemented. This was compared to the factors identified in the literature to create and modify planned questions that encouraged additional detailed RTP insights. The data collected through the **explanation phase**, including a deeper interrogation of the factors that contributed to the status of research-based projects in the six different classroom applications (Chap. 6)
- presents the data collected through the final **expansion phase** that identified the consistencies and differences experienced by participants through the implementation, sustainment, expansion or extinction of their research based cases. They discussed, elaborated upon and confirmed the factors and the relationships between them that developed as a result of their RTP experiences (Chap. 7)

Collectively this section presents the findings derived from the investigation of the six specific research to practice cases through the three phases of the study: Exploration, Explanation and Expansion. Figure 1 presents a visual overview that summarises the stages of knowledge presented through the second part of this book.

Each of the phases described in Fig. 1 had its own planned sub-questions **that were informed by the information collected through the previous phase**. The

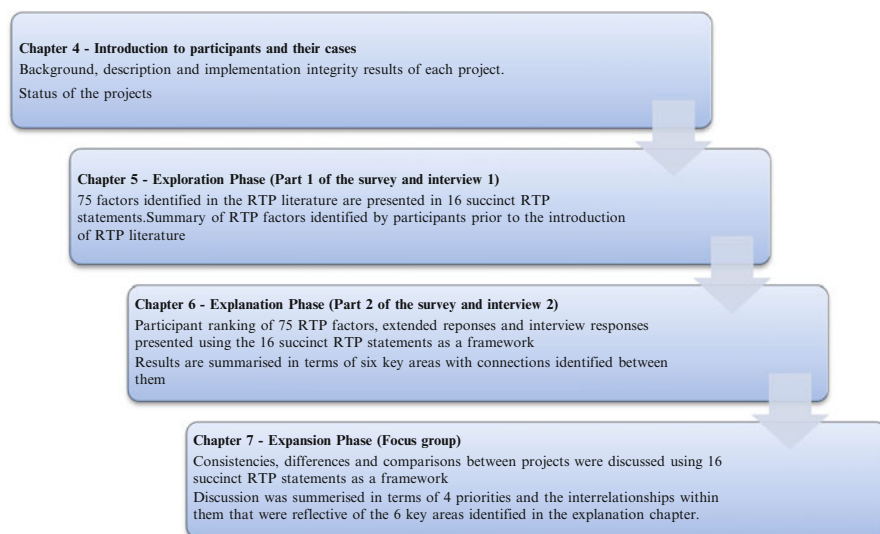


Fig. 1 Stages of reporting

italic font represents additions and modification to the original research questions that were planned prior to the data collection. The sub-questions guide each phase and the subsequent corresponding chapters. Consequently the research questions are pivotal to Part II and are as follows:

Overarching Research Question

What are the factors *and relationships between them (RTP factors)* that contributed to the status of research-based projects in inclusive education settings?

Exploration Phase Questions

What factors identified in the literature contribute to sustaining RBP in inclusive education settings? How have these factors been identified? To what extent have these factors been validated through empirical research? What are the key contributors to the RTP gap identified by research participants? How do they compare to existing literature?

Explanation Phase Questions

How do factors identified in the cases contribute to the status of RBP in inclusive education settings? In what ways do those factors exert an influence?

How have the identified relationship between factors exerted an influence on the practical application and sustainment of the projects?

Expansion Phase Questions

What factors, other than those identified in the exploration and expansion phases, contribute to the status of RBP in inclusive education settings?

What were the differences and consistencies in the relationships between the RTP factors that contributed to the status of the projects that were identified by the research participants?

Vignette

As presented through Part I, the ongoing challenges of research and practice becoming mutually beneficial continue to be rather intricate as they encompass many critical elements. Given the seemingly consistent concerns that...

sound research investigating implementation has been sparse, we are faced with the paradox of non evidence-based implementation of evidence based programs. (Cook and Odom 2013, p. 139)

In order to shift this paradigm and learn from and build on this well articulated limitation, a shared commitment between researchers and teachers is essential. As a researcher and a teacher, I like others, am consistently learning, yet need opportunities to check accurate understanding along the way (I refer to this as staged clarity). The fertile teacher insights that were collected from research instruments built from researcher insights were analysed to enhance clarity through the three phases of this work. This approach strengthened the teacher perspective and voice at each phase, consolidating direction and clarity as the project evolved. This technique may provide guidelines to support the implementation, sustainment and evaluation of evidence based practices, and reduce the research to practice gap to facilitate the use of resources with enormous potential in school applications.

Narrowing the research to practice gap evokes a trilogy of urgency, excitement and challenge. The following chapters strive to directly link research and practice paradigms and highlight the cyclic and reinforcing relationship between them.

Learning to HOW to use yesterdays and tomorrows research based practices to enhance student gains is here today.

Chapter 4

Meet the Teachers: Introducing Six Experienced Teachers and Their Selected Research Based Projects

The one exclusive sign of thorough knowledge is the power of teaching (Aristotle)

Abstract The chapter introduces the six-experienced teacher participants, their schools, background and the context of each individual case. It includes a description of the research base behind the projects implemented as well as the status of each project (successfully implemented, sustained or extinct) within each school setting. The techniques described by the each participant to ensure that their selected projects are founded in valid research and implemented with integrity are also presented. This information is included as it is critical to establish the authenticity and validity of research and its application. Although the successful outcomes of the individual projects were not the focus of the study, these details are included as a term of reference when describing the details of the research based practices. This assists in determining the quality of the individual research to practice efforts from which data for this project was derived and conclusions drawn.

This chapter aims to:

- introduces six highly experienced school-based teachers and the specific details pertaining to their schools and students.
- describes the design, implementation, validation and trajectories of each research based education intervention project.
- highlights the insights gained through the five case studies that were set in primary schools and one that was set in a secondary school.
- outlines the path and trajectories of each case including projects that were terminated after 1 year, those that were sustained, those that scaled within individual schools and those that were scaled beyond a original school setting where projects were implmented.

4.1 The Teachers, Their Schools, the Masters Course and the Research Based Projects

4.1.1 Background and Context: How and Why Did This Work Commence?

This research work took place in an educational system in Western Sydney that was comprised of 78 systemic schools with a total student population of over 41,000. Each teacher participant was employed by this education system that was committed to implementing evidence-based practices in their schools. It also had a specific focus on literacy.

The education system commenced a program of teacher education in inclusive education for special education teachers through: the voluntary participation in either Masters level coursework, or high-quality professional development provided by the system, or a combination of the two. It was hoped that this initiative would enhance teacher confidence and capacity in implementing and sustaining research based programs as they strived to action inclusive education policy and philosophy in their respective schools. Six teacher participant cases are presented and pseudonyms have been used and locations removed to maintain anonymity in all cases other than my own. A visual overview of case and participant details is presented in Table 4.1. This is followed by a narrative description of each case.

Each of the six teacher participants completed the same Masters of Education (Inclusive Education) course at a regional university via distance education with a 2-day residential school each semester. Participation in the course was voluntary and it was partially sponsored by the participant's employer both in terms of the cost of tuition (75% of the course costs) and through the allocation of two release study days per semester. Participants were selected based on their written applications, which addressed all the criteria that were set by the special education team of their education system. All the participants confirmed at the conclusion of their Master's course, that they completed the course to increase their depth of knowledge in inclusive education. They stated that they wanted to become better equipped to assist their students and colleagues and be able to share their knowledge of research-based practices and inclusive education with other members of the educational community. The Master of Education (Inclusive Education) course was developed by the University as a direct response to a request from the education system in which the participants were employed.

The course goal, to graduate highly skilled teachers capable of acting as agents of change in a range of inclusive educational settings, was achieved through instruction in the core knowledge and skills required to teach, consult, collaborate, advocate, and evaluate in an inclusive service delivery model. Specific themes across the course included: research, advocacy, and the evaluative knowledge and skills required to scale-up innovations in inclusive education to the level of the school. The course addressed both Australian and International theory, research and best practice in the field of inclusive education.

Table 4.1 Research participant details

Participant	Years of teaching experience	Project	Setting	Students involved at implementation/students at school	Staff involved at implementation/staff at school
Chris	19	Oral reading fluency	Elementary school (K-6)	90 in year 2/580	4/42
Mary	31	Curriculum bases measurement – literacy	Elementary school (K-6)	45 in K/353	4/32
Diane	25	Reading tutor program	Secondary school (7-12)	50 in years 7-10/1,200	2/150
Wilma	27	Oral reading fluency: CBM	Elementary school (K-6)	42 in Year 6/350	6/32
Sam	21	Explicit teaching: reading skills	Elementary school (K-6)	66 in Year 1/600	5/40
Meg	27	Peer assisted learning in spelling	Elementary school (K-6)	50 in Year 3/600	2/40

4.1.1.1 Core compulsory Masters Units Undertaken by All Participants

The course was comprised of seven core subjects that followed a prescribed sequence. The course structure and subjects were carefully designed, scaffolded, and ordered to enable participants to build capacity with theory, research and application in practice. Descriptions of the mandatory units follow in the order in which they were delivered.

Teaching and Learning in the Differentiated Classroom was the initial subject undertaken in the first session of the course. This subject built foundational skills and understanding in the pedagogies of inclusion (mastery teaching, cooperative learning and peer mediation) that enable teachers to differentiate instruction in the inclusive classroom. Students developed an understanding of inclusion that focused on need and context from both a theoretical and applied research perspective.

Assessment and Evaluation for Learning was undertaken in the second semester of the course, in conjunction with Designing and Managing the Inclusive Learning Environment. Assessment and Evaluation for Learning provided a focus on curriculum-based and authentic assessment and evaluation approaches, with a specific focus on literacy and numeracy. In this subject, assessment was considered a means to differentiate the learning experience for all students.

Designing and Managing the Inclusive Learning Environment placed the traditional focus of student behaviour management within a broader context of a comprehensive and integrated approach to the design of differentiated learning environments. The subject examined both pro-active and reactive approaches to behaviour management within ecological, cognitive and behavioural theories. These approaches were examined from the perspective of all educators in inclusive learning environments.

Collaboration and Teamwork in the Inclusive School was undertaken in the third semester of the course (second year). In this subject, participants learnt effective practice in the processes of interpersonal, cross-disciplinary, and organizational collaboration and consultation with a specific focus on building a repertoire of collaboration skills including: collaborative problem solving, teamwork, and evaluation.

Inclusive Education Legislation, Policy and Resourcing was undertaken in the fourth semester of the course (second year) in conjunction with the year-long *Inclusive Education Project*. Inclusive Education Legislation, Policy and Resourcing required participants to examine the current legislative and policy basis for the inclusion of children with disabilities in regular education settings. Participants referenced their work in this subject to their current practice identifying needs, strengths and opportunities in their classrooms and schools related to the delivery of inclusive education.

Designing the Inclusive School was undertaken in the fifth and final semester of the course in conjunction with second semester of the year-long *Inclusive Education Project*. *Designing the Inclusive School* provided a focus on how schools can become more responsive to individual difference. The subject examined contemporary national and international literature on school reform, improvement and

organizational change. This included the role of the inclusive educator as change agent and strategic planner for change and the resourcing of the inclusive school.

The course culminated in the development and implementation of an applied research-based project to address the needs of the students in the participant's settings, the *Inclusive Education Project*. Records of the details of these projects were used as a data source through this research.

The implementation of the research-based project was required as a capstone experience for the completion of the Master of Education degree. The project required the design and implementation of a validated RTP intervention. Denzin and Lincoln (2008) and Miles and Huberman (1994) defined empirically validated research as work proven to be effective as a result of sound rigorous empirical investigation. The course was framed around an evaluation methodology that required participants to employ a known evaluation model in the design and implementation of their project (Bain et al. 2004). Evaluation is described as "the identification, clarification, and application of defensible criteria to determine an evaluation object's value, its merit or worth, in regard to those criteria" (Fitzpatrick et al. 2004, p. 27). The evaluation approach provided an expedient yet empirically robust and informative way to determine the process and outcomes of the projects developed by the participants. The approach also provided practical opportunities for feedback that were used in school settings to further develop the projects.

Participants were required to design a research-based project based upon a record of prior successful use in applied inclusive education settings. The existing record of applied empirical research on the topic and its validation of evidence determined this. Participants presented a final report describing their projects and the details of its implementation as their Masters' thesis. These projects were used as a permanent product record that provided an account of the individual projects written by each participant. These permanent product records are referred to as projects through this research.

All ten students who completed the Master's course were invited to participate in this study. Six out of the ten students volunteered to be research participants in this study, while the remaining four students did not respond to email and phone requests seeking their participation, therefore no further contact was pursued. The implementation of the projects in the respective school settings provided the context for this study. The following section individually introduces the research participants and the details that are specific to their settings and cases.

4.1.2 Introduction to the Teacher Participants and Their Schools

All participants were female and their ages ranged from 40 to 54 at the commencement of the project. All were experienced teachers and had taught at an average of four schools. They all held the role of Special Education Teacher at the setting

where their project was implemented. All six had completed two university degrees prior to participating in this project. Five of the six projects were conducted in primary or elementary schools with student enrolments ranging from 350 to 600. Mary and Wilma worked at the same school with different cohorts of students, as did Meg and Sam. One project took place in a high school where approximately 1,200 female students were enrolled. At the time of completion of the data collection, three of the six participants were still working at the school where their project was implemented. The other three had moved to other school settings.

Table 4.1 provides a description of participants' details, their projects and settings. Additional details that are relevant to individual cases are provided in the narrative following the table. These details were collected through Part one of the RTP survey (see Appendix 1).

The following section introduces the teachers and their cases individually and includes the approaches taken to maintain the integrity of implementation of the projects. It begins with the definitions of each category used to describe the status of the projects being; extinct; partially sustained; sustained; scaled within settings; and scaled beyond settings. These categories are presented to provide guidelines to maintain clarity and consistency across all responses. This is followed by a description of individual case and participant details.

Definitions of Operational Categories Used to Describe the Status of Cases

1. Project extinct refers to projects that are terminated at the conclusion of the identified academic year within the multi-year study.
2. Partially sustained refers to projects that are operational beyond their year of implementation (course requirement) however the form of the project was not fully consistent with set guidelines.
3. Sustained refers to projects that continue to be utilized in the same form as was the case in the initial year of implementation.
4. Scaled within setting refers to programs that have been utilized with staff/students beyond those that were planned at the initial implementation year and within the same setting.
5. Scaled beyond setting refers to programs that have been utilized in settings beyond the original implementation setting.

Note implementation year refers to the year the project was undertaken as a part of the University course requirement.

4.1.3 Lets Meet the Teachers Individually

As the focus of this research was to raise awareness of the factors that contributed to the success or failure of implementing research in practice, it is important to provide a brief insight into the foundation of the research based projects and how they

were implemented. It is critical for teachers to be informed consumers of research and an initial step to reducing the RTP gap is for users be able to identify which projects have a research base and which projects claim to have a solid research base. This section presents the foundational details of each case by introducing each teacher participant, their purposefully selected research project and the tactics they used to maintain the integrity of implementation of the projects. Teacher's voices are extensively used throughout Part two and the information presented below was predominantly gathered from the participant teacher Masters final project reports, referred to as permanent product records and Part One of the RTP survey.

4.2 Chris- Case 1 (Participant Researcher)

4.2.1 *Year 2 Curriculum-Based Measurement- DIBELS- Oral Reading Fluency*

I chose to take on the role of a participant researcher in this study as I believe my views and experiences that are unique to my involvement could contribute to the focus of this study. As a participant researcher I completed each phase of the data collection first so that I was not influenced by the responses of other participants. I have pre-existing views and opinions acknowledge that I have brought personal and professional insights as a student, researcher and educator through my teacher and researcher experience to this study. These experiences have, and continue to present both positive influences and challenges in this work. As a teacher, I have both an interest in, and commitment to inclusive education. The insights gained from being a researcher and as a primary school teacher may also be seen to add strength to this investigation. However, it is also acknowledged that my personal experience may create biases in the interpretation and presentation of findings within this thesis. The ways in which these possible biases have been reduced were explained in Chap. 3.

Expost Facto Analysis: Snapshots Over Time

Expost facto analysis research enables the investigation of cases after situations occurred without interference from the researcher. Participant quotes and extracts from permanent product records are presented throughout Part Two as they represent the individual case experiences over time.

At the time of the project implementation I described my school in the following way:

My school is new, only 10 years old, and staff remained stable during that time with minimal changes. I have enjoyed watching the school grow and change over the past decade. Staff members are supportive of each other and school initiatives. We enjoy social gatherings on a regular basis and work very hard to provide a range

of opportunities for the students. The staff, students and parents work together to give the students the opportunity to participate in events such as Wakakiri (a creative arts initiative where students perform for large audiences in a well publicized evening event at a Sydney venue), a school production of Robin Hood and multiple sporting days.

In order to cater for the needs of my students and meet the requirements of the Masters degree I implemented a project entitled: **A program for tracking reading fluency for year 2 students**. It started as a pilot program to address the lack of growth in the reading development between students in year 3 and year 5. The project was designed to track the individual reading abilities of 94, Year 2 students.

4.2.2 The Research Base Supporting the Intervention

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) were used in the project. DIBELS was developed at the University of Oregon and is described as a prevention-orientated, Curriculum Based Measure (CBM) utilized to identify readers at risk of not achieving adequate outcomes (Good and Kaminski 2002). DIBELS is comprised of the following measures which are implemented individually: ISF (Initial Sounds Fluency – preschool to mid Kindergarten); LNF (Letter Naming Fluency- beginning Kindergarten to beginning 1st grade); PSF (Phoneme Segmentation Fluency- mid Kindergarten to end 1st grade); NWF (Nonsense Word Fluency – mid Kindergarten to end 1st grade); ORF (DIBELS Oral Reading Fluency- mid first grade through sixth grade); RTF (Retell Fluency- mid first grade through sixth grade).

DIBELS Oral Reading Fluency (DORF) measures were selected for my project to address the identified reading needs of students. DORF measures have been used widely in schools to respond to Great Britain's National Literacy Strategy (Department for Education and Employment 1998) and America's No Child Left Behind Act (2001). DORF is a standardised individually administered test of accuracy and fluency that uses connected text.

A number of studies investigating the efficacy of the DORF approach have shown that improved fluency can lead to comprehension gains, and improved reading growth (Grima-Farrell 2014; Kuhn and Stahl 2003; Shinn et al. 1992). The success across a wide variety of implementation settings, support the use of DORF measures as beneficial in a single class and in whole school implementation (Berninger et al. 2006; Shinn et al. 1992).

Student performance is measured by having students read a passage aloud for 1 min to determine the number of words read correctly. Reading passages with clear instructions are provided. They are calibrated for the goal level of reading for each grade. My pilot project represented the first of a three-staged planned program that was specifically designed to address the lack of student growth in reading ability using DORF. The second phase aimed at implementing DORF measures in year 1 and the third phase was to expand the use of these measures from years 3 to 6. The

need to address the lack of growth in student’s reading abilities was identified by the school staff and through an external school review. The transparency of students’ academic results due to national testing also identified the lack of reading growth in many students’ results from the year 3 to year 5 National Assessment Program – Literacy and Numeracy (NAPLAN).

4.2.3 Reported Program Implementation Integrity

The DIBELS program included a number of protocols and procedures for monitoring the integrity of implementation of the measures (See Chris’ response to implementation integrity section of the survey in Table 4.2). Other ways the program was monitored included observations, pre and post interviews, student and teacher questionnaires and surveys. The Masters project permanent product record was consulted to provide the following implementation details;

The instructions provided in the DIBELS administration and scoring guide were used. DORF data was collected from 94, year 2 students over a 6-week period. Three DORF passages were presented to each child in week 4 and week 9 of term

Table 4.2 Summary of the reported implementation integrity provided by research participants

Checklist questions	Response		
	Yes	No	N/A
Did your project use a pre-existing programs or assessments with guidelines or instructions (for example, CBM, CBA, DIBELS)?	Chris	Meg	
	Mary	Diane	
	Wilma		
	Sam		
If so were they utilized?	Chris		Diane
	Mary		Meg
	Wilma		
	Sam		
Was there consistency in the implementation of program features?	Chris		Meg
	Mary		Diane
	Wilma		
	Sam		
Were suggested project materials, such as workbooks or manuals used throughout your project?	Chris	Meg	Diane
	Wilma	Mary	
	Sam		
Were results collected and calculated in accordance with guidelines or instructions provided?	Chris		Meg
	Mary		Diane
	Wilma		Sam
Was the project evaluated using the guidelines or instructions provided?	Chris		Meg
	Mary		Diane
	Wilma		Sam

4. An average of the raw scores from the three passages was calculated. Student performance was measured by having students read each passage aloud for 1 min. Words omitted, substituted or hesitations of more than 3 sec are scored as errors. Words self-corrected within the 3 sec are scored as accurate. The number of correct words read in 1 min from each of the three calibrated passages, were averaged to calculate individual student's oral reading fluency rate. The same process was repeated in week 9. This second opportunity to collect students ORF results made it possible to compare tracked reading fluency results on two separate occasions.

4.2.4 Outcomes of My Project

The DORF scores collected at the start of the project indicated that student scores ranged from 13 to 191. Of the 94 students assessed, only 55 % were reading beyond the age appropriate rate of 90 words per minute. The mean DORF rate increased from 87.47 words per minute at the start of term 4 of the implementation year, to 95.9 by the end of the year. These DORF scores along with 97 % of teachers' who indicated that they believed DORF measures to be accurate in determining ORF, combined to highlight the benefits in implementing DORF measures at my setting .

4.2.5 Scaling Up of My Project

Scaling up of the project occurred at a faster rate than expected within the first 2 years of its implementation. The project started with 3 year 2 classes in the first year of implementation and by the end of the second year of implementation, DIBELS measures were used from K-6. Student reading fluency growth rates continued to increase across the school until December of the second year. By the third year of implementation the DORF measures were no longer administered during the recommended time frames and the project was only partially sustained. By the fourth year the DORF measures were no longer administered and the project became extinct.

4.3 Mary- Case 2

4.3.1 Kindergarten: Curriculum Based Measurement- DIBELS- Initial Sound Fluency and Letter Naming Fluency

Mary was the only participant with international teaching experience. She had taught for 13 years in schools in Ireland, Kenya and Spain (K-6) prior to her 16 years of teaching in Australian schools as a K-6 and Special Education Teacher. Mary described her school in the following way:

My school is a rural K-6 two-stream school situated in south western Sydney. Many of the students in our school are from families where one or both parents are from a European background, where English is spoken as a second language. Some parents work on the land, whilst others would be considered blue-collar workers (See Wilma's description of the school setting for additional details as Wilma and Mary were from the same school).

Mary's project initially targeted Kindergarten students and aimed to identify those in need of extension or additional supports in the area of literacy as early as possible. Information gained from the project was used to inform intense explicit teaching for those students and make their school experiences effective from the start. The project was titled: Curriculum Based Measurement – A method of identifying students who are 'at risk' with literacy at the beginning of Kindergarten. Mary stated that:

This project was selected to establish the value of immediately identifying children 'at risk' of reaching kindergarten benchmarks with literacy, and that with additional explicit instruction in phonemic awareness, the needs of these children could be addressed.

Mary reported that her project presented the value of using curriculum-based measurement from the beginning of Kindergarten to identify students at risk of failing to learn to read. It also included 4 weeks of explicit instruction for the students identified as being 'at risk'. The curriculum-based measurements used were DIBELS Initial sound fluency (ISF) and Letter Naming Fluency (LNF) probes.

4.3.2 The Research Base Supporting the Intervention

These measures were also created at the University of Oregon (Good and Kaminski 2002) but they have a different application to the DORF measures used in my case. The ISF task requires students to identify the word that begins with a target sound from an array of four pictures. There are a total of 12 items on each probe. Every fourth item requires that the child produce the onset sound for a target word (Good et al. 2001). The LNF tasks requires the student to name as many letters as they can in 1 min from a printed page containing rows of randomly ordered upper and lower case letters. The measures were specifically designed to assess the 'Big Ideas' of early literacy and the critical areas of literacy indicated by the National Reading Panel (2000) and the National Research Council (1998). These critical areas of literacy include phonemic awareness, phonics, fluency, vocabulary and comprehension.

According to Mary, a number of studies investigating the efficacy of CBM approaches have shown that:

CBM measures have been applied to screening, placement in curriculum levels and progress monitoring although the best feature of CBM is its usefulness in helping classroom teachers to determine the effectiveness of their teaching in a variety of applications. They have been recognised internationally as a tool that is reliable and inexpensive to administer (Allinder et al. 2004; Shinn 2002).

Mary's project used the Initial sound fluency (ISF) and Letter Naming Fluency (LNF) subtests of DIBELS while my case utilised the DORF subtests. Mary reported that she implemented the ISF and LNF measures at the start and the end of every 4-week cycle within her project to determine if any changes in student achievement were evident. Her project was consulted for additional information. In the project, Mary stated that the measures were specifically designed to focus on phonemic awareness and provide teachers with knowledge to assist with explicit instruction in this area. She identified that explicit instruction can be referred to as the systematic instructional approach that consists of both design and delivery components.

Mary did not provide literature support for explicit teaching although its efficacy is well established (Cohen and Spenciner 2005; Hall 2010; Simpson and Walsh 2015). An additional search identified that teaching using explicit instruction is most beneficial for low-performing students and students in special education. However, the results from extensive research indicate that all students benefit from well-designed and explicitly taught skills (Hall 2010). Explicit teaching draws on both the behavioural and cognitive theories of learning. Cognitive theory is concerned with "how students think, process information and remember" (Cohen and Spenciner 2005, p.192). Behavioural theorists are concerned with observable behaviours and the arrangement of stimulus conditions as well as reward (Cohen and Spenciner 2005). The key features of explicit instruction are structured tasks that are developed after a highly sophisticated analysis of curriculum. Teacher demonstration, guided practice based on the principles of mastery learning, academic focus, student engagement, teacher feedback, scaffolding and reinforcement of tasks, verbal and cognitive clarity and independent practice are important elements of explicit teaching (Arthur-Kelly as cited in Foreman 2005; Foreman and Arthur-Kelly 2014; Killen 2003). A number of studies examining the efficacy of explicit instruction have shown it as an effective strategy for teaching phonological awareness (Al Otaiba et al. 2005; Carnine et al. 1990; Ellis 2005; National Inquiry Into the Teaching of literacy 2005).

4.3.3 Mary's Reported Project Implementation Integrity

Mary's completion of the implementation integrity checklist identified that DIBELS Initial Sound Fluency and DIBELS Letter Naming Fluency progress monitoring probes were implemented according to guidelines specified in the program. She also used teacher observations and teacher and student feedback to assist her in determining the effectiveness of her project. Mary's results were calculated and the project was evaluated in accordance with the program guidelines. Mary used DIBELS Kindergarten Benchmark assessments to collect data on the phonemic knowledge of 45 children beginning school the first year of her project implementation. The DIBELS tools used in the intervention were Initial Sound Fluency and Letter Naming Fluency. All 45 students across two classes in Kindergarten were assessed in weeks 1 and 2 of the first year of implementation and each probe took a minute each to administer. ISF required students to look at a series of pictures in

groups of four and to point to the picture beginning with a particular sound. Students needed to score 8 to be in the low risk category, 4 in the some risk category and less than 4 to be in the at risk category. The initial assessment found 27 students to be at risk with 16 in the some risk category and 2 in the low risk category. Eight children out of the 27 in the 'at risk' group had a score of zero. Twenty students were found to be at risk of not knowing letter names.

Mary reported that in the following weeks the students were taught four sounds explicitly for 10 min in each class. Students were given the opportunity to develop independent practice by playing games like 'I Spy' and composing silly sentences orally using vocabulary built from the initial sounds taught. Rhyming skills were developed by creating word families. During the second interview Mary stated that by the end of 1 week of explicit instruction the 27 children in the 'at risk' category were assessed using ISF progress monitoring probes and only 13 students were found to be at risk. Direct instruction lessons continued in the following week but the 'at risk' group received five extra minutes instruction to help practice and consolidate the sounds learnt. The 13 'at risk' students were assessed again and 6 students were still found to be at risk but no student scored less than 2. Explicit instruction lessons continued over a 4 week period and at the end of the intervention six students were recorded in the 'at risk' category, 16 in the some risk category and 23 in the low risk category.

Mary reported that she modelled explicit instruction to the staff during the first week of the project. The classroom teachers then taught it in subsequent weeks. Through teacher observations Mary found that the instruction given was direct and explicit. Feedback was given to teachers on their use of guided and independent practice during the lessons. Teachers completed a survey on their experience teaching phonemic awareness explicitly as well as the training provided in the administration of the DIBELS probes. Mary's responses to the survey and her interview responses identified that teacher feedback supported the value of using CBM to identify children at risk for literacy difficulties from the beginning of Kindergarten. Mary also explained that teachers valued the support this data could give when planning instruction.

4.3.4 Outcomes of Mary's Project

Mary's initial analysis of the data identified 27 children to be 'at risk'. Following the first 4-week period of explicit instruction in phonemic awareness, 'at risk' students were assessed using DIBELS Progress Monitoring probes in Initial Sound Fluency. Mary reported that the number of 'at risk' students reduced by 46.7% from 27 to 6. Classroom observations indicated that teachers were graphing data and modifying their instruction to support those children at risk. Mary reported that the teacher feedback she collected on the administration of the DIBELS probes indicated that the probes were easy to administer and were an invaluable way of collecting data in a busy classroom.

4.3.5 Scaling Up of Mary's Project

Mary reported that her project grew rapidly due to its success. The project was scaled in its second year of implementation with DIBELS measures being administered in all classes from Kinder to Year 6. Mary's project was scaled and used in schools beyond the implementation setting in during its third year of implementation.

4.4 Case 3- Diane

4.4.1 Years 7–10: Curriculum- Based Measurement- Peer Assisted Learning

Diane described her project implementation setting as having a “low socio-economic status, with many nationalities but the majority of students are from Philippino backgrounds”. It is an all girls secondary high school that is well resourced and offers specialist learning areas including photography and digital design studios, music rooms, a large performance space for drama, dance and music, technology rooms and an agricultural farm.

Diane's project title was: ‘A Reading Tutor Program’. It was designed to prevent students from leaving school prior to completing Year 10 because their reading ability did not allow them to fully participate in learning experiences while at school. The project aimed at boosting the reading levels of 50 students. It was initiated to improve reading accuracy, fluency and comprehension.

4.4.2 The Research Base Supporting the Intervention

During the interview Diane reported that the project consisted of students using Peer Assisted Learning Strategies to improve student reading ability. Her project provided additional details about peer-assisted learning.

Topping and Ehly (1998) defined peer-assisted learning as the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions. Peer tutoring is a specific form of peer-assisted learning; it is a collaborative approach in which students (in pairs) interact to assist each other's academic achievement, with one pupil adopting the role of tutor and the other the role of the tutee. Students read aloud to a tutor who encouraged, corrected (accuracy) and checked for comprehension. The program was modified for the high school setting and was based on Peer Assisted Learning Strategy research.

A number of studies identified the efficacy of Peer-Assisted Learning Strategies (PALS) through providing evidence of its effectiveness (Topping and Ehly 1998;

Fuchs et al. 2001). PALS strategies were used extensively in the US and were found to have potentially positive effects on reading achievement for English language learners (What Works Clearinghouse 2010). Rohrbeck et al. (2003) study added that all teachers should receive training on the implementation of effective PAL strategies.

Diane described that she used CBM DIBELS Oral Reading Fluency probes to determine if a student qualified for placement in the program. Non-standardized measures for repeated reading were taken to assess student improvements throughout the program. The structure of the program included repeated reading, partner reading, paragraph shrinking and prediction relay. Partner reading used a technique called pause, prompt and praise.

Diane reported that the school executive and the teaching staff supported the program. The implementation setting was a Year 7–10 secondary school campus and students from each year group were represented. Participants included students who had been identified as ‘at-risk’ and Year 10 volunteer tutors. The students had been identified from school-based Screening Tests on enrolment, ELLA (English Language and Literacy Assessment) and reading assessments. ELLA is a state wide, mandated assessment test on English Language and Literacy administered to all Year 7 students in government schools and interested non-government schools in NSW. ELLA is a curriculum-based assessment, testing students’ knowledge and skills in particular aspects of literacy.

Diane reported that the tutors worked one on one with a particular student (that had been identified at risk as a result of the ELLA test) all year. The teachers supervising and managing the program were from the Learning Support Team. The stakeholders were the school executive, classroom teachers and parents of the student ‘at-risk’. Diane’s project was consulted to add clarification to the implementation details that Diane had provided during the interview. It identified that the project ran for 2 days a week (Tuesday and Wednesday) for 30 min per day, all year. Diane explained that the timing encompassed 10 min before school, 10 min of Homeroom time and 10 min of Period 1.

4.4.3 Diane’s Reported Project Implementation Integrity

Diane stated that she used observations, checklists, student surveys, teacher interviews and questionnaires to determine if the program was being implemented as claimed and in order to evaluate the effectiveness of her Reading Tutor Program. She also employed DORF probes, described in my project to determine changes in student oral reading fluency rates. Diane’s completion of the implementation integrity checklist and interview responses indicated that although the DIBELS ORF measures and guidelines were used, they were not calibrated for high school students. Diane stated that some modifications to fluency rate expectations were evident as her students were in high school.

Diane reported that:

the majority of teachers (80%) thought that the reading ability of the students had improved and this enabled them to access more of the curriculum. They also thought the students participated more in classroom activities. The tutor survey results identified that all of the tutors thought the program helped the students read better. There was concern from some of the tutors that they needed more training in the specific techniques of the activities”.

Diane further reported that the tutors thought the graphing of results from the Repeated Reading exercise onto a chart inspired the students to do better.

Diane selected the DIBELS primary school measures for her high school setting because “some students were considered to be ‘at-risk’ because their literacy levels were significantly lower than their peers, so they were disengaging with their learning”. Diane explained that the Reading Tutor Program used the standardized Neale Analysis of Reading Ability Test to determine improvement in reading accuracy and comprehension after the initial 10-week period. She stated that the results of the Neale and DORF measures indicated an improvement in reading rate, comprehension and accuracy.

4.4.4 Outcomes of Diane’s Project

Diane reported an average of a 6 month improvement in reading accuracy, a 4 month improvement in reading comprehension and an average improvement of 52 words read per minute per student over the first term of the project’s implementation. Both Diane’s interviews responses and project acknowledged that the implementation of the program was affected by student absenteeism and lateness to school. Diane identified that the strongest response from students was from the Repeated Reading activity. She claimed that students were inspired to improve their scores as the visual impact of their graphs provided immediate feedback and had a positive effect.

4.4.5 Scaling Up of Diane’s Project

Diane stated that her project continued to be sustained at her school 3 years after it was initially implemented. The project grew to incorporate year 9 students as tutors as well as the year 10 students. Diane reported that due to the limited space in the library the project couldn’t be scaled. Interestingly Diane moved to another secondary setting whilst the project was only in its second year of implementation. She implemented the same project at her new school and Diane reported that the projects were still being sustained at both high school settings.

4.5 Case 4- Wilma

4.5.1 Year 6: Curriculum-Based Measurement- DIBELS- Oral Reading Fluency

Both Wilma and Mary implemented their individual projects at the same setting. Wilma's description of the setting provided additional details:

The program was conducted at a mainstream primary school of 356 children. The setting was rural with children living on farms or in small residential areas. There was a wide cultural diversity within the school and large numbers of students had Lebanese, Italian, Maltese or Croatian background. The majority of students were born in Australia. The Year 6 cohort was comprised of 42 boys and girls. Classes were of mixed ability, although seven students formed a small group who received extra support in reading from the Special Education Teacher.

Wilma's project was aimed at the Year 6 level while Mary's was aimed at the kinder students. Wilma's project title was Oral Reading Fluency: Using Curriculum Based Measurement for Assessment and Instruction (See Chris' case for description of DORF).

4.5.2 The Research Base Supporting the Intervention

Wilma stated the reason for selecting this project for her setting was because;

The Program was designed to address the problem of limited assessment of Year 6 students in Reading. The students completed the TORCH Comprehension Test at the beginning and end of the school year and this was been documented in the School Assessment Plan. This data was used to plan graded reading groups and as evidence in the E-A Reporting Scale. Students experiencing difficulty were tested regularly using the PM Benchmark Kit that ceased when they attained Level 30 (Reading Age 12 years). The PM Benchmark kit is used to assess students reading abilities using unseen and age relevant texts (Randell et al. 2002). The Year 6 students Basic Skills Test data was also used to inform planning and instruction. The DIBELS Oral Reading Fluency was introduced to assess the students' skill of reading connected text in grade level material (Good et al. 2002). The Program served the need for regular student assessment using a reliable, valid and research-based tool and the planning of explicit instruction that would improve oral reading skills based on this data.

Wilma outlined how the data gathered was used to plan appropriate instruction using the re-reading strategy. The students completed activities daily and graphed their results as a self-monitoring approach. Corrective feedback was given during the project and instructional adjustments were made when needed.

4.5.3 Wilma's Program Implementation Integrity

Wilma used student and teacher surveys and observations to determine if her project was implemented according to the provided guidelines. She implemented the Dynamic Indicators of Early Literacy Skills Oral Reading Fluency (DORF) measures to determine the effectiveness of her project. During the interviews Wilma reported that all students were assessed using the DORF measure at the beginning, middle and end of the year and additional data was collected throughout the year according to the guidelines. Wilma's implementation integrity checklist (See Table 4.2) indicated that DORF administration and scoring was implemented following standardised procedures outlined in my case. Wilma stated that results were calculated and the project was evaluated in accordance with the administration and scoring guidelines.

4.5.4 Outcomes of Wilma's Project

Wilma stated that all students in Year 6 were assessed using the DIBELS ORF at the commencement of the project. She identified that on the completion of this initial assessment, seven students were categorised as 'at risk' band with raw scores ranging between 44 and 70 words per minute. Wilma explained that the reading of 83 words per minute was required to move up to the 'some risk' band. Wilma went on to report that after a period of 4 weeks, only three students remained in the at risk group with scores ranging from 48 to 70 wpm. Additional details on the results of the project were located in Wilma's project;

In general there was an upward shift of students throughout the three bands. All students completed reading fluency activities during the project and graphed their results daily. A small group of students also completed oral reading activities as part of their homework and parents provided feedback regarding their child's progress.

4.5.5 Scaling Up of Wilma's Project

Wilma stated that by the second year of implementation her project was scaled and DIBELS measures were being implemented in all classes from Kinder to Year 6. During the first interview, Wilma reported that the project was scaled beyond her setting and was implemented at another school in its third year of implementation.

4.6 Case 5- Sam

4.6.1 Year 1: Explicit Teaching as a Practice for Quality Teaching

Sam worked in two primary settings during her project implementation year. Sam implemented her project in the larger primary school that she taught at and described the setting in the following way:

The program is set in a non public school in NSW. The school of 600 students was built 20 years ago to service newly developed housing estates in an Outer Western Sydney area that is predominantly working and middle class. Although not regarded as a school with a high migrant population significant numbers of the children are second and third generation Australian from Maltese backgrounds. In the past 3 years a number of refugees from the Sudan have been enrolled in the school. A significant number of children enter Kindergarten each year having had limited experiences with literacy and books.

Sam suggested that a significant number of children had limited literacy experience as they began Kindergarten. As a result Sam stated that a need existed to understand and explore explicit teaching of phonological awareness with her group of students. Her project was titled: Explicit Teaching: Improving Foundational Reading Skills in Year 1 (See Mary's and Chris' cases for a description of other DIBELS probes). It explored the relationship between explicit teaching and the reading development of 66, Year 1 students.

4.6.2 The Research Base Supporting the Intervention

Sam provided the following project description of the research-based nature of her intervention:

This program seeks to build capacity among Year 1 teachers to implement explicit instruction in reading particularly in the area of phonological awareness. The program exists to support the work of the school leadership team who promote the use of explicit teaching as a practice for quality teaching. It has been initiated because ongoing professional development of teachers is needed to successfully implement this pedagogy. Improving student outcomes in the area of English was a recommendation of a whole school review.

Teachers and parents are concerned when children do not meet the expected outcomes for reading. Children are keen to succeed in reading, and are frustrated when they cannot read at the level of their peers. This has consequences for learning and behaviour as well as social and emotional development.

The Learning Support Team have noted that children who are referred because of reading difficulties consistently score below the benchmark in the area of phono-

logical awareness as measured by The Sutherland Phonological Awareness Test SPAT-R (Neilson 2003).

The goal of this program is to provide a model of explicit teaching that could be scaled up in the school. It is hoped its use will be sustained over time to become an embedded teaching practice that promotes inclusion. A secondary goal is to improve student outcomes in reading in Year 1 through the explicit teaching of phonological awareness.

Sam indicated that her project addressed the complex skills of blending and segmenting, after the review of sound and word discrimination, syllables, rhyme identification and production. As a result of the implementation of this research-based project, Sam believed that all classroom teachers have the capacity to implement reforms that can positively impact student outcomes.

4.6.3 Sam's Reported Program Implementation Integrity

Sam described her project and its implementation with great clarity. She explained that she employed an implementation integrity checklist and interviews to confirm whether teachers incorporated the key features of explicit instruction in the phonological awareness lessons (See Table 4.2). The literature supporting the efficacy of explicit instruction is described in the account of Mary's project and will not be reiterated here. Sam reported that the SPAT-R (Neilson 2003) and DIBELS Phonemic Segmentation Fluency (PSF) probes were administered pre and post instruction to determine changes in student phonemic segmentation fluency scores. Sam's project identified that SPAT-R provides a diagnostic overview of skills involved in early literacy development and PSF measure assesses a student's ability to segment three- and four-phoneme words into their individual phonemes fluently. The PSF measures are a subtest of the DIBELS measures implemented in the other cases. Sam's project identified that she selected this measure as evidence-based research shows that phonological awareness is a foundational reading skill that is best taught explicitly (Carnine et al. 1990; Ellis 2005; Stanovich 1986 as cited by Sam).

The implementation integrity checklist completed by Sam in her survey identified that she administered and scored the DIBELS measures with consistency. She reported that she used a number of tools to calculate results or evaluate the explicit teaching program. These tools included the use of Sutherland Phonological Awareness Test or SPAT-R (Neilson 2003) and DIBELS PSF measures. The SPAT-R was used to measure the improvement in the children's phonological awareness. This test allowed not only general performance to be evaluated but also included individual test items for syllable counting, rhyming, blending, segmenting and manipulation. "This test is easily administered and effectively identifies deficiencies in a comprehensive range of phonological skills" (Robinson, in Foreman 2005, p. 34). Sam reported that this information can be validated by the use of a curriculum based measure or CBM. The DIBELS Phoneme Segmentation Fluency was

used to monitor the mastery of phoneme segmenting of students at risk. The implementation integrity of explicit teaching will be measured using an observation checklist completed by the literacy support teacher when mentoring the teachers. Sam's project also identified that the teachers completed an evaluation questionnaire.

4.6.4 Outcomes of Sam's Project

The reporting of Sam's results was comprehensive. Sam identified that her project commenced with initial SPAT-R (Neilson 2003) scores collected on three classes of Year 1 students. In Class A the range of scores on the initial SPAT-R was from the 2nd to the 95th percentile. The median score was at the 49th percentile. A total of 21% of children in Class A fell below the benchmark of the 25th percentile; 13% were in the critically low range which is below the 10th percentile. In Class B the range on the SPAT-R was from the 2nd to the 89th percentile. The median score was in the 36th percentile. Nineteenth percent of children fell below the benchmark; 13% were in the critically low range. In Class C the range on the SPAT-R was from the 2nd to the 95th percentile. The median score was in the 30th percentile. Thirty-two percent of children fell below the benchmark; 18% were in the critically low range. In each class only one child had a reading age of less than 6 years as measured by the Waddington Reading Test.

Sam continued to explain that students' instructional reading levels as measured by running records from the PM Benchmark (2000) ranged from 0 to 24. By the end of Kindergarten, 52% of students did not meet the school benchmark of level 5. Sam identified that all the children who had critically low scores on the SPAT-R failed to meet the reading benchmark of level 5. She added that DIBELS PSF measures were also used during the project to monitor student progress. Sam stated that by the conclusion of the project, PSF and an analysis of the pre and post test SPAT-R results showed improvements across all students.

The children at high risk and some risk were monitored weekly during the project using the progress monitoring forms of the DIBELS PSF. The post-test results show that the children at high risk or some risk of not achieving the benchmark score of 35 correct segments per minute fell in all three classes. In Classes A and B 26% of the class moved out of risk compared to 9% in Class C. At the conclusion of the project 83% of class A were at low risk, 86% of class B were at low risk and 45% of Class C were at low risk. Four percent of Class A remained at high risk, 0% of Class B remained at high risk and 15% of Class C remained at high risk.

Sam suggested that teacher attitudes on rating scales were positive towards phonological awareness and explicit teaching. She calculated that 100% of teachers reported using explicit teaching strategies after the project's conclusion.

The implementation integrity checklist and weekly interviews were used to confirm whether teachers incorporated the key features of explicit instruction in the phonological awareness lessons. All teachers were observed using the scripted pro-

gram and they reported finding it helpful. On one occasion when the teacher anticipated her absence the next day the program was left for a casual teacher to use. Implementation integrity was strongest for Teacher B who followed the lesson plan verbatim. Monitoring, feedback and verbal clarity were particular strengths for teachers A1 and A2. On occasions both teachers A1 and A2 reverted to questioning the students rather than modelling and leading.

4.6.5 Scaling of Sam's Project

During the first interview Sam reported that her project continues to be sustained at her school 3 years after its initial implementation. She also stated that she has implemented a similar project at another primary school setting. No additional details were identified throughout this initial exploration phase.

4.7 Case 6- Meg

4.7.1 Year 3: Peer Assisted Learning- Spelling

Meg and Sam implemented their individual projects at the same setting. Meg added that the setting is in a “lower socio economic working class area outer western suburb of Sydney”. Meg’s program targeted spelling skills and addressed a need identified through Basic Skills Testing. The project title is: Peer Assisted Learning and its use as an Intervention Strategy in the Improvement of Spelling skills. Meg stated that:

The project was originally designed to address the problem of poor spelling skills in Year 3 in classroom writing tasks. Previous results from the NAPLAN Tests in both Literacy and Numeracy assessments revealed that on an overall basis, the students did not perform well in the spelling skills area.

During the interviews Meg reported that Peer-Assisted Learning Strategies (PALS) Reading and PALS Maths were developed to help teachers accommodate diverse learners and to promote their academic success.

4.7.2 The Research Base Supporting the Intervention

Meg’s project identified that PALS is listed among the best evidence-supported maths programs on the John Hopkins University website. The What Works Clearinghouse found that Peer-Assisted Learning Strategies instructional program to have potentially positive effects on reading achievement for elementary-age children.

PALS were designed to be used with all students in kindergarten through 5th grade. Meg did not provide evidence on the efficacy of PALS, yet it has been successfully implemented in Iowa, Minnesota, Oregon, Tennessee, Texas, and other states. The findings of Klingner et al. (2015), Fuchs et al. (2001) and Rohrbeck et al. (2003) presented evidence for the effectiveness of PALS. The work of Allor et al. (2001), Calhoun (2005), Fuchs et al. (1999), Hock et al. (2015), and Marchand-Martella et al. (2004), and all used variations of PALS to determine its effectiveness.

Meg indicated that she identified poor spelling skills when she read student's work. She added that she decided to implement her project with Year 3 because she was confident that two of the Year 3 teachers would be willing to help the following year. Meg explained that the initial phase of the project was implemented over a 4-week period. Fifty students participated in a 20 min structured paired spelling session using the seven-step SPELLER structure (Keller 2002). SPELLER uses visual imagery, systematic testing, and auditory reinforcement on a daily basis through the use of peer assisted learning strategies. It is a Class Wide Peer Tutoring strategy (CWPT) that has proven to be effective for increasing students' mastery of spelling (Keller 2002; Westwood 2014). Working for 20-min a day, all students take turns playing the role of tutor and tutee, and they use the SPELLER strategy in order to learn their weekly spelling words. The Waddington Diagnostic Spelling Test was administered as a pre and post test to determine changes in students' spelling ability. Meg stated that the Waddington Test was easy to use and was a useful tool for diagnosing literacy difficulties. Meg provided less information than other participants through the interviews, surveys and her permanent product record.

4.7.3 Meg's Reported Program Implementation Integrity

Meg determined the effectiveness of the implementation of her Peer Assisted Learning project through teacher and student surveys. She collected the outcomes of student results through the weekly monitoring of spelling scores. Meg stated that she also completed checklists on both students and teachers to monitor that the implementation of the suggested Peer Assisted Learning Procedures were followed. Meg's responses to the implementation integrity checklist stated that some pre existing project material and guidelines were used without consistency (See Table 4.2). No additional information on the integrity of the implementation of Meg's project was located.

4.7.4 Outcomes of Meg's Project

During the interview Meg reported that 98 % of students experienced improvements in their spelling scores when using peer assisted learning strategies within the first 4 weeks of the project. Meg explained that through observation and the use of

checklist data she was able to determine that all teachers involved in the project adhered to the peer assisted learning procedures and consistency was maintained. Her permanent product record was consulted to gather additional information on the spelling scores but this data was not available. Meg's project did confirm that spelling scores had improved in 98 % of students, yet no additional data was located. It also stated that not all teachers implemented the project with integrity, as they did not maintain consistency in their use of the instructions that Meg had provided. Her interview responses did report that the school executive did decide to scale the project in the second year of implementation without consulting the staff.

4.7.5 Scaling of Meg's Project

During the first interview Meg reported that her project was sustained in its initial year of implementation. She stated that it became partially sustained in its second year and was extinct by the third implementation year.

4.8 Summary of the Reported Implementation Integrity

As previously mentioned it is important to gauge an understanding of the integrity with which the research based programs were implemented. This section presents an overview of these details to be used in a comparison during the subsequent stages of knowledge formation. In brief, all participants individually completed an implementation integrity checklist for this study over and above their individual efforts that was included in Part 1 of the Survey. Table 4.2 provides a summary of these responses. Previous research determined the validation of the selected evidence based projects and this section provides a summary of how the implementation integrity of each project was maintained. Each research participant, through the use of the methods they selected, determined the effectiveness of individual projects.

In summary, a review of the implementation integrity information provided by each research participant identified that four of the six participants implemented programs or assessments that were resourced with scripted instructions. Meg and Diane implemented programs that were not resourced with scripted instructions. Diane implemented her project in accordance with implementation guidelines, however the project was not calibrated for secondary school students. Meg reported that she adhered to the peer assisted learning procedures and that consistency in implementation was maintained. Additional information gathered from her Master's project identified inconsistencies in the way teachers implemented the spelling lessons and administered the spelling tests in the projects second year of implementation.

4.9 Summary of the Status of the Projects

A summary of the status (level at which the project is implemented or sustained in the school setting) of the projects at annual intervals is presented. The data in Table 4.3 was collected through the Master's projects, interviews and surveys (described in the methods chapter) and presents an overview of each projects status. It captures the status of the projects within their setting at the end of each academic school year of implementation at a glance.

In summary, Chris, Mary and Meg commenced their projects in the first year of implementation, while Diane, Wilma and Sam commenced in their projects the year after. By the end of the fourth year of this research, two primary school based projects became extinct and four projects (three primary and one secondary) had been scaled beyond the implementation setting. Of the four projects that were scaled beyond their implementation setting, two participants remained at the setting and two did not. Of the two extinct projects, one participant remained at the setting while the other had moved to another educational setting.

Table 4.3 Project status across a 4 year period

Project	Implementation years			
	1st year	2nd year	3rd year	4th year
C1 Chris/primary Pilot program for tracking reading fluency of year 2 students	Established and sustained	Scaled within setting	Partially sustained	Extinct
C2 Mary/primary CBM identifying students who are 'at risk' with literacy at the beginning of Kindergarten.	Not yet started	Established and sustained	Scaled within setting	Scaled beyond setting
C3 Diane/secondary reading tutor program years 7–10	Established and sustained	Established and sustained	Scaled within setting	Scaled beyond setting
C4 Wilma/primary Oral reading fluency: using CBM for assessment and Instruction for year 6	Not yet started	Established and sustained	Scaled within setting	Scaled beyond setting
C5 Sam/primary Explicit teaching: improving foundational reading skills in year 1	Not yet started	Established and sustained	Scaled within setting	Scaled beyond setting
C6 Meg/primary Peer assisted learning and its use as an intervention strategy in the improvement of spelling skills for year 3	Established and sustained	Sustained	Partially sustained	Extinct

Key Points

This chapter sought to provide key background information about the participants and their projects as a term of reference for the findings around RTP. It highlighted that:

- Participants partook in the system supported Masters of Education (Inclusive Education) course to increase their depth of knowledge in inclusive education to better respond to the needs of their students and colleagues through the use of research-based practices.
- Projects were united in their literacy focus and were implemented by highly experienced professionals who volunteered to participate in this research.
- All participants completed the same core units in a Masters (Inclusive Education) that was specifically designed as a response to the school systems request.
- All projects were implemented in schools and monitored for 3 years within a 4-year period. This is because teachers decided which 3-year period they implemented and monitored their projects.
- Only cases that implemented projects that had a strong research base were included in this study.
- All participants reported how they maintained the project integrity through their implementation.

References

- Al Otaiba, S., Kosanovich-Grek, M. L., Torgesen, J. K., Hassler, L., & Wahl, M. (2005). Reviewing core kindergarten and first-grade reading programs in light of No Child Left Behind: An exploratory study. *Reading & Writing Quarterly*, *21*, 377–400.
- Allinder, R. M., Fuchs, L. S., & Fuchs, D. (2004). Issues in assessment. In A. M. Sorrells, H. J. Rieth, & P. T. Sindelar (Eds.), *Critical issues in special education* (pp. 106–124). Boston: Pearson.
- Allor, J. H., Fuchs, D., & Mathes, P. G. (2001). Do students with and without lexical retrieval weaknesses respond differently to instruction? *Journal of Learning Disabilities*, *34*(3), 264–275.
- Bain, A., McDonagh, S., Lancaster, J., & Hollitt, J. (2004). *Collaborative course design and mapping: A team-based approach to course development and review*. Paper presented at the ATEA conference.
- Berninger, V., Abbott, R., Vermeulen, K., & Fulton, C. (2006). Paths to reading comprehension in at-risk second grade readers. *Journal of Learning Disabilities*, *39*(4), 334–351. (ERIC Document Reproduction Service No. EJ757962). Retrieved 25 Nov 2008, from ERIC database.
- Calhoun, M. B. (2005). Effects of a peer-mediated phonological skill and reading comprehension program on reading skill acquisition of middle school students with reading disabilities. *Journal of Learning Disabilities*, *38*(5), 424–433.
- Camrine, D., Silbert, J., & Kame'enui, E. (1990). *Direct reading instruction* (2nd ed.). Columbus: Merrill.
- Cohen, L., & Spenciner, L. J. (2005). *Teaching students with mild and moderate disabilities: Research-based practices*. Upper Saddle: Pearson/Prentice Hall.

- Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children*, 79(2), 135–144.
- Denzin, N. K., & Lincoln, Y. S. (2008). *Strategies of qualitative inquiry* (3rd ed.). Los Angeles: Sage Publications.
- Department for Education & Employment. (1998). *The national literacy strategy: Framework for teaching*. London: DfEE.
- Ellis, L. A. (2005). *Balancing approaches: Revisiting the educational psychology research on teaching students with learning difficulties* (Australian Education Review, Vol. 48). Camberwell: Australian Council for Educational Research.
- Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2004). *Program evaluation: Alternative approaches and practical guidelines* (3rd ed.). Boston: Pearson.
- Foreman, P. (2005). *Inclusion in action*. South Melbourne: Thomson.
- Foreman, P., & Arthur-Kelly, M. (2014). *Inclusion in action* (4th ed.). South Melbourne: Cengage Learning.
- Fuchs, L. S., Fuchs, D., & Kazdan, S. (1999). Effects of peer-assisted learning strategies on high-school students with serious reading problems. *Remedial and Special Education*, 20(5), 309–318.
- Fuchs, D., Fuchs, L. S., Thompson, A., Svenson, E., Yen, L., Al Otaiba, S., & Saenz, L. (2001). Peer-assisted learning strategies in reading: Extensions for kindergarten, first grade, high school. *Remedial and Special Education*, 22(1), 15–21.
- Good, R. H., & Kaminski, R. A. (2002). *Dynamic indicators of basic early literacy skills* (6th ed.). Eugene: Institute for the Development of Education Achievement.
- Good, R. H., Kaminski, R. A., Simmons, D., Kame'enui, E. J., & Oregon School Study Council, E. (2001). Using dynamic indicators of basic early literacy skills (DIBELS) in an outcomes-driven model: Steps to reading outcomes. *OSSC Bulletin*, 44(1), 2–26.
- Good, R. H., Gruba, J., & Kaminski, R. A. (2002). Best practices in using dynamic indicators of basic early literacy skills (DIBELS) in an outcomes driven model. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology* (pp. 679–700). Washington, DC: National Association of School Psychologists.
- Grima-Farrell, C. (2014). Curriculum-Based Measurement of Oral Reading fluency (CBM-R): An objective orientated evaluation study. *Support for Learning*, 29(4), 370–393.
- Hall, G. E. (2010). Technology's achilles heel: Achieving high-quality implementation. *Journal of Research on Technology in Education*, 42(3), 231.
- Hock, M. F., Brasseur-Hock, I. F., & Deshler, D. D. (2015). Reading comprehension instruction for middle and high school students in English language arts: Research and evidence-based practices. In *Improving reading comprehension of middle and high school students* (pp. 99–118). Cham: Springer International Publishing.
- Keller, J. M. (2002). Book review of instructional design competencies: The standards (3rd ed.), by R. Richey, D. C., Fields, and M. Foxon. Syracuse: ERIC Clearinghouse on Information and Technology. *Educational Technology Research and Development*, 49(4), 107–110.
- Killen, R. (2003). *Effective teaching strategies: Lessons learned from research and practice* (3rd ed.). Australia: Social Science Press.
- Klingner, J. K., Vaughn, S., & Boardman, A. (2015). *Teaching reading comprehension to students with learning difficulties, 2/E*. New York: Guilford Publications.
- Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2010). *Single-case designs technical documentation*. Retrieved from What Works Clearinghouse website: http://ies.ed.gov/ncee/wwc/pdf/wwc_scd.pdf
- Kuhn, M. R., & Stahl, S. A. (2003). Fluency: A review of developmental and remedial practices. *Journal of Educational Psychology*, 95, 3–21.
- Marchand-Martella, N., Martella, R. C., Bettis, D. F., & Blakely, M. R. (2004). Project PALS: A description of a high school-based tutorial program using corrective reading and peer-delivered instruction. *Reading & Writing Quarterly*, 20(2), 179–201.

- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks: Sage Publications.
- National Inquiry into the Teaching of Literacy. (2005). Canberra, ACT: Department of Education, Science and Training.
- National Reading Panel. (2000). *Report of the national reading panel: Teaching children to read* (NIH Publication No. 00-4654). Bethesda: National Institute of Child Health and Human Development, National Institutes of Health.
- National Research Council. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Neilson, R. (2003). *Sutherland phonological awareness test: Revised*. Camberwell: Australian Council for Educational Research.
- No Child Left Behind (NCLB) Act of 2001, 20 U.S.C.A. § 6301 *et seq.*
- Randell, B., Giles, J., Nelley, E., & Smith, A. (2002). *PM benchmark kit 2: An assessment resource for emergent-12 years*. South Melbourne: Nelson Thomson Learning.
- Rohrbeck, C. A., Ginsburg-Block, M. D., Fantuzzo, J. W., & Miller, T. R. (2003). Peer-assisted learning interventions with elementary school students: A meta-analytic review. *Journal of Educational Psychology, 95*, 240–257.
- Shinn, M. R. (2002). Best practices in using curriculum-based measurement in a problem-solving model. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 671–697). Bethesda: National Association of School Psychologists. ISBN 0-932955-85-1.
- Shinn, M., Good, R., Knutson, N., Tilly, W., & Collins, V. (1992). Curriculum-based measurement or oral reading fluency: A confirmatory analysis of its relation to reading. *School Psychology Review, 21*(3), 459–479.
- Simpson, A., & Walsh, M. (2015). Children's literature in the digital world: How does multimodality support affective, aesthetic and critical response to narrative? *English Teaching: Practice & Critique, 14*(1), 28–43.
- Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*, 360–407.
- Topping, K., & Ehly, S. (1998). Introduction to peer-assisted learning. In K. Topping & S. Ehly (Eds.), *Peer-assisted learning* (pp. 1–23). Mahwah: Lawrence Erlbaum.
- Westwood, P. (2014). *Teaching spelling: Exploring commonsense strategies and best practices*. London: Routledge.

Chapter 5

The Exploration Phase

Collective impact gives us the tools to do more by doing differently. It offers a proven path forward for advancing
(Liz Weaver)

Abstract This chapter strives to highlight the RTP knowledge gained through employing the first stage of the methodological pathway described as the Exploration Phase. This approach evolves further in the following Explanation and Expansion phases to demonstrate case study methodology in action whilst enhancing the new knowledge on ways to reduce the research to practice gap in inclusive education.

During the exploration phase, the key RTP factors that were asserted as having an impact on the use of research to directly respond to significant student and school needs, are presented from both researcher and teacher perspectives. Firstly, the research to practice areas that were treated extensively in the literature review are summarised and offered in a comprehensive table format within this chapter as a source of RTP knowledge derived from the voices and perspectives of researchers. They are further synthesised and presented in a list of 16 Succinct Research to Practice factors with implications and capacities within inclusive contexts.

Secondly, teacher insights and perspectives that have been driven by their direct experience of implementing research in practice, prior to the introduction of the RTP literature based factors, are presented. Both the literature based researcher insights and initial practice based teacher insights and experiences are closely compared in this chapter. Interestingly most of the RTP factors that were asserted in the RTP literature were identified by the teacher participants prior to the introduction of the RTP literature. Personal will power and determination and the role of students and parents are introduced by the teacher participants as having a positive impact on the sustainment of research based projects in practice, yet they were not included in the RTP literature.

This chapter:

- Presents an overview of the factors that were identified through the investigation of the five bodies of education literature that are said to influence RTP and make educational settings more responsive to the needs of all students (Table 5.1).

Table 5.1 Research-to-practice key themes and related factors

RTP	↑	PD	↑	TE	↑	CSR	↑	CBAM
Responsiveness of research		Responsiveness		Responsiveness of university education programs		Scalability and educational power		Research-based change process
Useable		PD programs must respond to genuine teacher needs and concerns		Joint partnerships Research-based		Use of scientific research		Responds to personal growth in knowledge and skills
Practical		Reflective of student needs		Effective delivery		Validated with scalability potential		Process not an event
Accessible		Responds to classroom contexts		Good contextual fit		Partnerships		Change is a highly personal experience
Trustworthy		Collaboration		Valued by students		School level design for school level influence		PD should occur over time and be dynamic in addressing participant needs
Evidence-based		Joint partnerships		Address real life concerns		Effective adoption		Collaboration
Manageable		Mutually identified boundaries, structures and purposes		Need for opportunities and time for practical development of classroom based skills and knowledge		Comprehensiveness		Shared ownership of the elements involved in and resulting from the change process
Collaboration		“Buy in” from all stakeholders		Collaboration		Need for complete theory framework		Shared acknowledgement of changing needs of stakeholders and environments
Shared responsibility, understanding and ownership		Engagement in pursuit of genuine questions, problems and solutions		Joint partnerships		Intersection of process and content		Understood by all
		Scientifically-based instructional practices		Involving practitioners in the research process		Adequate and complete design		United

RTP	PD	TE	CSR	CBAM
Collegiality	Evidence-based and proven to be effective	Multiple level feedback	Self reinforcing	Awareness of shared ownership and individual strength
Mutual respect	Central to students learning	Responsive, cohesive course structures	Well aligned system and policy goals	Support through change
Cooperation	Viewed as credible by teachers	Mutually aligned norms, expectations and roles	Supportive environments and structures	Sustained assistance
Communication	Comprehensive	Critical in developing links between RTP	Emergent feedback	Support structures must change as needs change
Substantive frequent interaction	Support	Support	Evaluation as an emergent function rather than an add on	Beyond individuals
Feedback	Teachers need to feel sufficiently prepared	Addresses teacher enthusiasm	Systemic technology	From multiple agencies and agendas
Professional Development	Networks	Awareness of fatigue and exhaustion	Long term and consistent	Within realistic time frames
Consistent	Sufficient instructional time	Support personnel qualities and attributes	Well developed materials, teacher manuals, assessment and training	
Address needs	Adequate resources	TE more coherent	Professional Lives/Need for recognition and reward	
Active teacher involvement	Ongoing stakeholder support	Adequate depth and time to research-based practices		
Review research to increase research knowledge	Limiting competing demands to achieve a balance of multiple agendas			
Resource Support				
Adequate time and materials				
Long term				
Positive attitude from students and peers				

- Presents a list of 16 succinct and detailed RTP factors that represent the factors that have been asserted repeatedly through the RTP literature. It distills the RTP factors and presents a more detailed account of what is described in the literature review.
- Compares researcher and teacher perspectives prior to the introduction of teacher participants to the RTP literature.
- Highlights the RTP factors identified by participants that was not presented in the literature.
- Reports on the RTP factors identified by the literature that were not articulated by participants.
- Examines and reports on the validity of the RTP literature claims through the six RTP cases.
- Uses extensive teacher participant descriptions to provide direct examples that of the **reciprocal relationship** between RTP factors including issues of shared responsibility and accountability, resources, consistent and long term support, shared goals, leadership, technology, depth of knowledge, collaboration and sufficient preparation and its impact accountability.

5.1 The Development of the Literature Based Framework at the Core of the RTP Investigation

The chapter reports on the first phase, the exploration phase, of this research journey. It presents the RTP assertions identified in relevant literature (see Chap. 2 for additional details) that was used as a framework to guide this rather complex investigation. The review of literature was set within the parameters of inclusion and investigated five main bodies of literature that worked to link educational research and practice efforts. As investigations that directly examined the implementation of validated research projects in schools were limited, the literature search was expanded to investigate the areas of Professional Development (PD) and Teacher Education (TE) that were specific to the translation of Research-To-Practice (RTP). The Comprehensive School Reform (CSR) literature was examined as it constituted a large-scale effort, with guidelines specifically requiring the implementation of research-based practices at scale. The Concerns Based Adoption Model (CBAM) was also examined as it represented a longstanding model, related to adopting change. The purpose of including CSR and CBAM was to further identify more specific factors not generated by the RTP, PD and TE literature.

In brief, studies were only included in the reviewed literature if they appeared in a published peer reviewed journal and identified specific RTP factors that assisted in translating the work of researchers to address the needs of students in school settings. Descriptors introduced to refine the EbscoHost search included: RTP, professional development, teacher education, comprehensive school reform, concerns based adoption model, inclusive education and education. Articles were only

selected for this review if they specifically discussed the use of research-based programs in primary, secondary and university settings. Additional details of the literature search refinement process are identified in Chap. 2.

Table 5.1 presents an overview of the factors that were identified through the investigation of the five bodies of education literature that are said to influence the sustained implementation of research to practice and make educational settings more responsive to the needs of all students. These areas were treated extensively in the Chap. 2 and are summarised in this chapter as a source of data.

Each of the studies was read and categorized according to the project and participant details and the RTP factor identified. The consistencies in RTP assertions across both intervention research and commentary claims are presented in Chap. 2 (Table 2.1). Commentary based claims were greater in number than claims that emerged from an empirical study of RTP. Articles that made reference to PD in fields other than education and did not refer to the RTP gap were not selected for this review. TE represented an avenue that links the efforts of researchers and educators who work in inclusive education environments to enhance RTP endeavours. Like PD, TE was expected to have a RTP agenda however the TE literature indicated that while RTP remains a concern, it was rarely investigated. The Comprehensive School Reform initiatives yielded information about the way reform projects were implemented through its focus on bringing research-based practice to scale in public education. The Concerns Based Adoption Model and related research focused on deepening RTP knowledge through increasing an awareness of change related elements. CSR and CBAM searches presented the strongest representation of research-based knowledge when compared to commentary claims, than the RTP, PD and TE searches.

As presented in Chap. 2 many of the RTP references located only made brief mention of suggested RTP factors or made reference to areas other than education. The following section presents a summary of the major themes and factors that were derived from the review of RTP and the related literature.

5.1.1 Factors Identified in Literature That Contributed to Sustaining Research Based Projects

The factors that were consistently identified through the RTP literature as being contributors to the status of research-based projects are presented in Table 5.1. Increasing detail and less commentary-based assertions were evident as the literature search moved from the initial RTP search through to the investigation of the CBAM literature. The factors presented in the RTP column of Table 5.1 predominantly represented the assertions gained through commentary claims. PD with a RTP agenda went further in identifying ways RTP knowledge could be shared with educators. PD assertions supported the concerns identified about the possible reasons for and solutions to the RTP gap. They promoted the need for comprehensive,

coordinated, and sustained efforts in the area of teacher education to reduce the RTP gap.

The investigation of the TE literature built on factors identified in PD research. The main need identified in the teacher education literature was the need to collaboratively link university and school efforts. Collaboration, defined in the teacher education context, referred to researchers working with practitioners to address their questions and needs. The exploration of the TE literature built on prior RTP knowledge to present TE as an avenue for involving practitioners in the research process. This was said to encourage a deeper comprehension and ownership of research efforts.

Through the Comprehensive School Reform initiative, previously identified collaboration factors were further described through the identification of the need for a complete theory and framework. A need for well-aligned system and policy goals with feedback and evaluation features built into projects rather than added on at the end was identified. The Concerns Based Adoption Model work provided information on the changing needs of stakeholders and environments and provided an insight into the variables that required attention for the successful transition of RTP.

Collectively the information presented by researchers through the RTP literature provided an accumulation of knowledge about those factors reported to contribute to the RTP gap. Table 5.1 presents a summary of the RTP factors categorized within themes. See Chap. 2 for additional details regarding studies, factors and authors.

Simple can be harder than complex: You have to work hard to get your thinking clean to make it simple. But it's worth it in the end because once you get there, you can move mountains. (Steve Jobs)

5.2 Researchers Perspectives

The summary of the RTP factors presented in Table 5.1 represents quite a complex collection of RTP knowledge categorised across three themes; collaboration, responsiveness of research and support (see Chap. 2 for distillation of themes). They have been generated through many years of combined research efforts in which researchers have described ways to involve practitioners in the development, implementation, and maintenance of empirically validated interventions. Other researchers have compared variations in the intensity of professional development programs and described models used to deliver research-based instruction and programs to teachers. CSR researcher efforts have provided an insight into factors that have resulted from large-scale RTP efforts and CBAM researchers have introduced elements associated with change. Researchers have also focused their efforts on working more collaboratively with practicing teachers to improve the trustworthiness, accessibility, usability, attractiveness and responsiveness of research.

This significant work has yielded relevant and guiding information on ways to bridge the RTP gap, however simplifying them into a digestible and usable form

was somewhat of a challenge. The use of guiding and non-exclusive themes were employed to refine the RTP literature further to create the list of succinct and detailed RTP factors. The list of 16 succinct RTP statements represents the factors that have been asserted repeatedly through the RTP literature. It distills the RTP factors and presents a more detailed account of what is described in the review of four decades literature.

5.2.1 List of 16 Succinct RTP Factors

This list reflects the well-documented commentary claims and insights from related large and small research-based projects as detailed in Chap. 2.

1. RTP is influenced by the extent to which educators are involved in the conduct of research projects. Such involvement can result in partnerships that share responsibility and ownership and build a sense of credibility among stakeholders in the results of research and the research process.
2. RTP works most effectively in systems and schools that have clear goals promoting the use of research. When these goals are shared and research projects respond to genuine questions, problems and solutions the RTP gap can be reduced.
3. Research projects that have shown or considered ways to address scalability have a greater likelihood of bridging the RTP gap and exerting whole school influence or effect.
4. Research projects are enhanced when communication and feedback from many stakeholders (from all levels) is ongoing and substantive (emergent function).
5. For research-based projects to be successful, they need consistent, long term support that addresses teacher enthusiasm, personal qualities, fatigue and changing needs is required.
6. Well-developed student materials, teacher manuals and training within realistic time frames promote the effective adoption of research-based projects.
7. Acknowledgement, recognition and reward for the use of research-based practices will enhance their use.
8. Technology has many functions that can help make RTP more efficient. When it is accessible and used by stakeholders it can enhance the implementation, sustainment and expansion of research-based projects.
9. The use of validated research-based projects is enhanced if their outcomes are viewed as credible by stakeholders, elicit positive student attitude and address genuine teacher and student concerns and needs.
10. Limiting the competing demands placed on practitioners is required if research-based practices are to be implemented and sustained.
11. Sufficient and ongoing instructional time, preparation and resourcing are contributors to the effective use and promotion of Research-based practices.

12. Research-based projects that have a complete implementation strategy through being comprehensive, accessible and practical will be more successful. When these features are woven into the projects design the engagement of all parts of the project can have a reinforcing effect that can further enhance its success.
13. Teacher education has the capacity to promote the use of research-based practices when subjects or courses in a preparation program are intentionally linked, reinforcing key ideas and enabling students to build both a big and small picture understanding such practices. When such courses directly respond to teacher needs through a clear and consistent approach the bridge between research and practice can be further reduced efforts.
14. Research-based projects can be enhanced when teachers and researchers work together to develop links between theory (researchers perspective) and practice (classroom teachers perspective). This can contribute to teachers feeling sufficiently prepared which creates an avenue for research-based practices to be effectively used in classroom.
15. An awareness of changing stakeholder and setting circumstances is required to ensure research-based practices are be responsive to individual and setting needs.
16. An understanding by all stakeholders that the implementation and sustainment of research-based practices is an ongoing process, not an event, enhances their continued use.

These 16 statements were used to examine factors that impacted upon the practical transition of RTP within and across the six specific RTP cases. The knowledge and assertions associated with each area was identified through their interrelationships and links to research-based knowledge relevant to classrooms, schools and systems.

The three phases of this study examines the validity of these 16 statements through the staged investigation of the six specific RTP cases. The following section identifies the alignment between the the literature-based knowledge (summerised in these 16 succinct RTP statements) and the perceptions of the experienced teacher participants. The first round of interviews provided an opportunity for open-ended discussion prior to the RTP literature being introduced to the teacher participants. These 1:1 interviews were all conducted over afternoon tea, in the same location and used the same questions. The guiding questions were framed to give participants an opportunity to verbally introduce their project and present the factors and events that they felt contributed to the status of their projects (see Appendix 2 for list of guiding interview questions). A description of all the data collection tools was provided in Chap. 3.

5.3 Teacher Perspectives

5.3.1 *Factors Identified by Participants Prior to the Introduction of RTP Literature*

The second part of the exploration phase gave teacher participant's the opportunity to share their perspectives on the factors they believed to contribute to the success and/or failure of their RBP *prior to the RTP literature being introduced to them*. These responses also created a baseline to establish the perceptions and priorities unencumbered by any expectancy that may be created by the prior knowledge of the RTP literature. During the exploration phase the participant data was collected to respond to the second research question:

What RTP factors were identified through initial teacher interviews?

Responses were collected from teacher participants individually and then compared across all six case studies. The data collected provided details of the features that enabled or inhibited the implementation and sustainment of the research-based projects in each school setting. The responses articulated by participants identified two major themes: **support and teacher education**. The following section uses direct quotes from the teacher participants to highlight the similarities and difference in their. This information was collected in the first round of interviews, using these two broad themes as a framework.

What did teachers say mattered most to the success of their RBP before they were introduced to the literature?

5.3.1.1 Support

Responses that related to the general theme of support are presented initially as all teachers prioritised them as the major contributor to the successful implementation and status of their projects. All teacher participants made reference to the importance of support from staff and school leaders in their comments pertaining to time, sustainability, collaboration, shared focus and goals. The allocation of time to plan and create programs and resources and collaborate with the staff was identified as vital to the sustainment of the projects by all participants. Comments about the sharing of the roles and tasks that were essential to the practical implementation and continuation of the project were also identified as vital. All teachers reported the need for informal and formal communication opportunities to promoting the collaborative culture required for the sustainment of research-based projects. The following statements reflect the sentiment shared by all teacher participants.

Support had to be consistent; it couldn't stop after the project was up and running otherwise it would be bound to fail. You still needed time to ensure you could answer

questions and coordinate materials etc. Peer support and being part of a team had a significant impact (Sam).

You need to have ownership; people really have to own it. Resourcing was really important and the staff need to feel supported so they knew they did not have to do it all on their own (Chris).

All teachers expressed that support from staff and school leaders was most effective if it was long-term. Reports from teachers provided examples of the projects that had benefited from long-term support and those that became extinct when various supports were withdrawn. Examples of support ranged from the need for adequate staffing to self-determination and web support. The following examples present a range of support factors identified:

You know there is a fabulous web site that goes with it (DIBELS) so if people are interested they can go and do their own investigation (Mary).

It was the time, it was difficult to work with time constraints. I don't know how I would have had the time for the project if I had been full time then. I was working three days a week, so I was going in on my two days off to make up for things for the kids, laminating etc. (Meg).

Most teachers stated that when staff were involved in making decisions about the project they were supportive of its direction and goals. Meg presented another perspective of the importance of support and shared ownership, through an account of what happened when it did not exist:

I did a staff development day and part of that day was me presenting the Peer Assisted Learning which is what I had done for teachers the previous year, I could tell straight away that some said "I don't want to do this. This is not really going to work!" I knew that some of the teachers will want to do it and some of them won't want to. Also I did not have the time to go into the classroom and check how it is being done. I went in and demonstrated as much as I could with the time limit I had. It was so hard working with them and you could tell they were not going to do it (Meg).

In three of these four cases the new school leaders supported the projects and they continued to be sustained. Mary, Meg and Diane shared examples of the positive impact of support from the school leaders. Mary's experience highlighted the importance of consistency in the support from the leadership, even when there is a change of personnel. Diane provided an example of the benefits of the support of the principal and executive as she struggled with the lack of instructional reading materials for secondary students:

Even though we had a change of principal, the new principal is supportive and is keen. So from that point of view it can work! I think having the new principal on board could have been different if he had said no, I don't agree with that, it might just be all over. It might just depend a lot on leadership support. You know, I think that might be probably one of the main factors as to why it is still there (Mary).

They (principal and executive) all endorsed it. I think the research helped make a bigger improvement; it increased the level of improvement. Now I have got to say there wasn't a hell of a lot of research on it. It was very difficult to find anything in

a secondary setting on the reading program and so what there was, I took what they said and used those strategies and my principal and staff supported it (Diane).

Meg's case identified that even when stakeholders have concerns about asking the principal for support, if they are approachable and share the project goals they can have a positive impact and promote the use of the project; "In his favour, the Principal was on board right from the word go. I was a bit nervous about asking but he was brilliant. Another Principal may not have been so happy" (Meg).

Wilma provided another example of the impact of a supportive and enthusiastic principal. She also commented on the variance in support levels of individual teachers. Wilma shared her experience of the strength of the support of the leadership over staff support by stating that once the project became part of the whole school assessment plan it became a permanent, non negotiable feature of the school:

Because the Principal was so supportive he was very keen for it to become a part of our whole school assessment plan. Once it was adopted that meant we assessed the kids at the beginning, the middle and at the end of the year. Once it became part of the whole school assessment plan it sort of meant everybody had to take ownership and it was mandatory, they didn't have a choice (Wilma).

The following example described how a change in leadership and their lack of support negatively contributed to the status of my research-based project. This account confirmed the importance of the support of the leadership team through the negative impact of the withdrawal of support by the new principal and deputy. This example describes the result of the lack of ownership and commitment by leaders can have on a project. This lack of support from school leaders ultimately led to the projects extinction:

We had new staff come on board and we happened to lose a principal and a deputy at the same time. I don't think the ownership was there or the commitment was there. They were not there through the school review when the needs were identified. I think they had a different agenda and I think this particular project did not fall into their agenda. I think that was probably one of the strongest factors that contributed to the projects extinction (Chris).

5.3.1.2 Teacher Education

All six teachers suggested that teacher education efforts should directly respond to teacher need through an approach that is clear and consistent. All teacher participants shared thoughts on the usefulness of the Master's Course and its contribution to the sustainment of all projects. Participants described the usefulness of the course in a number of ways. Comments about the depth of understanding about what constitutes research-based projects were shared. They all suggested that the consistency in the structure and design of the course had assisted in their ability to comprehend new knowledge and to be able to share this knowledge with their staff. Teachers reported that the presentations they gave to their school staff were modelled on the information gained and the structure demonstrated through the course. The resonating consistent notion shared by participants was that the course was effective as the

aims of the university were the same as the school aims. This was described as being effective as what was learnt through the course could be shared with staff.

Meg's report on the Master's course reflected the comments of all research participants. Meg stated that the Master's course provided a depth of knowledge gained which she tried to share at her implementation setting:

We really had to go into depth with it. I had to know Peer Assisted Learning inside out. I knew where it worked, how many studies had been done, why it worked, so I had all that research to back up what I was saying to teachers. I presented all that to them, I suppose because I had done it in depth, nothing was on the surface it was so thorough.

I know I was trying to give them (staff members) the knowledge that I had gained from my course. For example that when I did my power point presentation, we had done a power point presentation in a previous assignment on Collaboration so I presented my Peer Assisted Learning power point, it was like I was doing an assignment. In an assignment I tried to be as thorough as I could, so all the previous work that I learned I tried to put it into the project (Meg).

Sam's comments on the structure of the course represented the way all participants described how the Master's course assisted in catering for the needs of the staff and students at their implementation setting:

I really think that the way our course was structured was to build up our capacity. I guess I modelled my instruction on the way the course was structured so we had done all those things on collaboration, in-service stuff, we had to do the power points and the pre and post tests. I guess I tried to model what I did on what we had done on the course as the aim was the same. Anything that we had done in that course was building towards the project. Anything that we had to do, that was important, we had to try and put that in (Sam).

My comments about the Master's course also identified the sentiment of the other five participants who expressed that the course had a strong impact on the implementation of the research-based projects. Consistency, collaboration and feedback that were positive features of the course were successfully transferred in five of the six settings:

I think the consistency in the Master's course across all subjects, was replicated in our setting because everybody knew what they were going to expect. I think the collaborative approach through the Uni masters project, the feedback; the consistency was replicated in my setting (Chris).

Diane introduced the sense of inclusion as the major take away from the Master's course. She referred to her interpretation of course components that were meaningful. Diane commented on the adaptation of features of the course to suit the needs of her secondary setting. She also referred to her moving from one secondary setting to another and identified the positive impact collaboration had on the status of her project:

The whole sense of inclusion was the driving force of the whole Masters. I was trying to get these kids included in every aspect of their education. The other thing that specifically clicked with me was the little bit about DIBELS and the reading, while I didn't take that on as strictly as it was, because it was really for infants and

primary. I took parts of that and put it into a secondary setting, that whole aspect about reading fluency. It was the CBM that drove it and every time a student didn't improve we intervened more. There was also that book, I can't think of the name of it, the book it's in my study (Interviewer intervenes and states *Self Organising Schools* after a long pause). Yep that's right! There were things in there that I reflected on especially because I was going between the two schools, trying to make my thing happen elsewhere. In my job in the secondary setting, it is all about collaboration, if I didn't collaborate with everyone it still wouldn't be running as it is now in my new school (Diane).

5.3.2 Comparison of the Factors Identified by Teacher Participants with the Factors Asserted in the RTP Literature

It is very interesting to note that without prior exposure to the literature, participants identified most of the RTP factors identified in the literature. These similarities identified through the practical examples described by participants, supported and expanded upon the literature based RTP factors. Closer investigation of these responses identified connections with 15 out of the 16 succinct RTP statements. In the following section responses are presented under the associated RTP statements that they best align. They are further categorised using the support and teacher education themes (identified by the participants in the previous section). The RTP statements are also presented in the order in which teachers prioritized them. The RTP factors not identified by teacher participants during this exploration phase are also presented. The section concludes with a comparison of the number of literature-based factors identified by participants and the integrity with which the project was implemented. The following phase, explanation phase, expanded on the responses of participants collected during this phase by providing practical examples with additional details of how the factors unfolded in classroom settings.

5.3.2.1 Support

Support factors were viewed as a priority by teachers as they were identified through 12 of the 16 RTP factor statements that were derived from the literature. This section presents specific RTP statements, followed by practical examples described by teacher participants during this initial round of interviews.

5.3.2.2 Shared Responsibility and Accountability

RTP factor statement 11 – Sufficient and ongoing instructional time, preparation and resourcing are contributors to the effective use and promotion of Research-based practices.

RTP factor statement 1 – RTP is influenced by the extent to which educators can be involved with research projects. Such involvement can result in partnerships that share responsibility and ownership and build a sense of credibility among stakeholders in the results of research and the research process.

All teachers described elements of RTP factors statements 1 and 11. The need for sufficient and ongoing time to prepare, instruct and make resources required to implement and sustain projects was consistent across all cases. All participants prioritised partnerships that share responsibility and ownership of project commitments with the support of colleagues and school leaders. The statements below are reflective of the sentiment shared by all teacher participants. They verify and demonstrate the RTP literature-based factors in school contexts.

They (staff, students and school leaders) were very keen. Staff support was good as was ownership. They were very keen and they all wanted to get on board and have a go (Wilma).

They all endorsed it (Diane).

5.3.2.3 Resources

RTP factor statement 6 – Well developed student materials, teacher manuals and training within realistic time frames promote the effective adoption of research-based projects.

All teacher participants reported that adequate staffing and materials reduced the demands on individual stakeholders and assisted in uniting school-based staff in supporting the projects and each other. This was identified as being essential to the implementation and sustainment of all individual projects. The following quote provides an example of how a united approach assisted the sustainment of projects;

People were united in owning the decision to implement DIBELS, as this was a way of addressing the schools needs and it served our purpose! We were able to see the gains that the students were making and that the teachers had something tangible to go back to that was consistent and standardised was great (Chris).

5.3.2.4 Consistent and Long Term Support

RTP statement 5 – For research-based projects to be successful they need consistent, long term support that addresses teacher enthusiasm, personal qualities, fatigue and changing needs is required.

RTP statement 10 – Limiting the competing demands placed on practitioners is required if research-based practices are to be implemented and sustained.

RTP statement 16 – An understanding by all stakeholders that the implementation and sustainment of research-based practices is an ongoing process not an event enhances their continued use.

All participants presented a need for consistency in enthusiasm, preparation time, and student and teacher resources (RTP factor statement 5). It was also identi-

fied that long-term support is required for programs to be sustained and scaled within schools (RTP factor 16). The projects that were scaled and those that were extinct presented different examples of the inclusion and withdrawal of these supports through their direct RTP experience.

5.3.2.5 Shared Ownership and Responsibility

RTP statement 4 – Research projects are enhanced when communication and feedback from many stakeholders (from all levels) is ongoing and substantive (emergent function).

RTP statement 3 – Research projects that have shown or considered ways to address scalability have a greater likelihood of bridging the RTP gap and exerting whole school influence or effect.

Participants consistently identified the need for shared accountability and a positive attitude from stakeholders if projects were to be sustained in classroom applications. Three participants highlighted the benefits of shared ownership and responsibility in practice in their description of how these factors were enhanced if research-based projects fell within the schools focus. This was evident in the three accounts presented by Mary, Wilma and Sue:

By having the whole school focused on reading and literacy last year certainly helped the project. Everyone had to know about it and be able to talk about it and act on it (Mary).

Once it became part of the whole school assessment plan it sort of meant everybody had to take ownership and it was mandatory, they didn't have a choice (Wilma).

..suggested that this needs to become part of school policy. When it did become part of the school policy it was a given, a non negotiable, everyone owned it, it was part of the long term school plan (Sue).

5.3.2.6 Shared Goals

RTP statement 2 – RTP works most effectively in systems and schools that have clear goals promoting the use of research. When these goals are shared and research projects respond to genuine questions, problems and solutions the RTP gap can be reduced.

All participants described that support was most effective when all stakeholders shared the goals of the project. This united approach identified in Mary, Wilma and Sue's quotes about the projects becoming part of the school policy, presented the impact of staff members being expected to implement and sustain the projects. Mary went beyond the literature and identified that when staff were part of the decision to make the project part of the school policy, stakeholders shared the goals and they were more supportive of the common goals. Meg's perspective identified the importance of support and shared ownership, through the account of what happened when it did not exist.

5.3.2.7 Leadership

RTP statement 15 – An awareness of changing stakeholder and setting circumstances is required to ensure research-based practices are responsive to individual and setting needs.

RTP statement 9 – The use of validated research-based projects is enhanced if their outcomes are viewed as credible by stakeholders, elicit positive student attitude and address genuine teacher and student concerns and needs.

All six participants affirmed the significance that the principal and leadership team had in the implementation and sustainment of research-based projects in schools. As described in the previous section, four of the six participants commented on the impact of a change in leadership while their projects were being implemented.

The support of the school leaders was a factor that was described as being critical to the implementation and sustainment of research-based projects across all cases. The examples that identified the support from the leadership provided in the previous section, demonstrated and described ways the leadership team positively contributed to the implementation and sustainment of projects.

5.3.2.8 Technology

RTP statement 8 – Technology has many functions that can help make RTP more efficient. When it is accessible and used by stakeholders it can enhance the implementation, sustainment and expansion of research – based projects.

Mary supported the need for projects to become a whole school focus and she added that her project itself was a support when it became part of the whole school plan as it was user friendly and directly addressed the needs of her students. Mary was the only participant who presented the advantages of stakeholders being able to access website support to enhance the use of projects, during the exploration phase.

I think it was user friendly. It was simple. There was no real long process that you had to go through to up skill staff to use it, they could always refer back to the web. Another thing is that we, as a whole staff decided that our focus for the year was going to be reading and literacy....I really can say comfortably now that in our school there wouldn't be a child that slipped under the radar and that has not been picked up, even a kid in the "some risk" category (Mary).

5.3.3 Teacher Education

Teacher education factors were identified through 3 of the 16 RTP factor statements. This section presents specific RTP statements pertaining to the broad theme of teacher education that were identified in the literature and then by the teacher

participants during. The following section presents direct examples of the way participants articulated their accounts of the impact of the Master's course on their individual cases.

5.3.3.1 Depth of Knowledge

RTP statement 13 – Teacher education has the capacity to promote the use of research-based practices when subjects or courses in a preparation program are intentionally linked, reinforcing key ideas and enabling students to build both a big and small picture understanding such practices. When such courses directly respond to teacher needs through a clear and consistent approach the bridge between research and practice can be further reduced efforts.

Mary described how the Master's course responded to her needs and had a strong impact on her research-based project. She identified factors similar to those in the RTP literature and went beyond literature-based knowledge to provide a practical account of the way that topics, such as assessment were covered in depth and how she was able to share research knowledge gained from the course with her staff, prior to being introduced to it:

Well, as a result of the Master's course I came up with this project. It was a result of doing an assessment evaluation unit that really brought it together for me. Because I never heard of the DIBELS actually she (lecturer) really, really made us think about what assessment was. Why are we assessing? Was it assessment just for the sake of assessment? Or are you teaching towards the test or was it an assessment to guide your teaching?

The value of that questioning was important, so I think that is why I chose to work with the younger kids in infants as well as I felt they needed help and I could reach them and identify a larger number using this. It was intensive, but you did not have to sit down for an hour per kid to do the assessment and stuff like that. Who has the time to do that?

We were presented with a lot of the research across different subjects. That was brought back to my staff when we were doing this project and devising it. You know, learning about collaboration, working as a team, what was going to be good for the whole school and a lot of the stuff I had learned through my university course, I was able to use when we were devising that program and implementing it in the school (Mary).

5.3.3.2 Structure of the Course

RTP statement 12 – Research-based projects that have a complete implementation strategy through being comprehensive, accessible and practical will be more successful. When these features are woven into the projects design the engagement of all parts of the project can have a reinforcing effect that can further enhance its success.

The consistency in comments on the Master's course confirmed the positive impact it had on the implementation and sustainment of individual projects. Sam summarized the strong sentiment of all participants when she verified and expanded on the literature (prior to her knowledge of it) when she compared course and school aims. Sam stated "like the course, the school must support teachers by addressing their needs and capacity. The course aims are the same as our school aims" (Sam).

5.3.3.3 Collaboration and Sufficient Preparation

RTP statement 14 – Research-based projects can be enhanced when teachers and researchers work together to develop links between theory (researchers perspective) and practice (classroom teachers perspective). This can contribute to teachers feeling sufficiently prepared which creates an avenue for research-based practices to be effectively used in classroom.

Wilma expressed the sentiment of all participants in her account of the school and course links that described how her staff had identified the strong research knowledge base she had acquired throughout the course. She went beyond the literature when she made reference to the parent support raised as a result of having their children involved in the research-based project and how the experience contributed to promoting the link between home and school:

I think one fact of it (the course) was that I had a pretty strong knowledge base in the topic I was doing because I had done a lot of the background work in the course and people recognised that. It wasn't just that I was trying to introduce this tool that I thought was really good. They understood that it was research-based, I had studied it, I had implemented it, and it was a positive move. I think that was the most important thing. I also think that for parents, it (the research-based project) was particularly positive. I got letters back from parents saying what a great thing it was and that they were very proud for their children to be part of a research project and they actually asked for ways that they could work on their children's reading fluency at home, so that was a way for us bridging the school from home gap (Wilma).

5.3.4 *RTP Factors Identified by Participants, NOT Identified in the Literature*

Interestingly two areas not identified in the RTP literature yet were described by teachers as having an impact on the sustained success of RBP in schools included the role of students and parents and personal will power and determination.

5.3.4.1 Role of the Student and the Parents

Wilma described the enthusiasm of the children and the parents at her setting. She described ways they interacted and engaged with the project and identified a competitive element that encouraged some students. This factor was not identified in the RTP Literature:

The kids were really tapped into it. I mean the ones on the project. We did self-assessment with them so they were graphing their own results every day, taking it home at the end of the week. That was great. They loved that competitive edge to it. They could see in black and white if they were improving or not.

Parents were able to see those results too because all the teachers were showing the DIBELS booklets at parent teacher interviews. They had the school reports and the booklets and quite a few parents said “that is really great!” Now I can see what you are looking for and how I need to improve. They could see if they were making a lot of errors or if they were decoding very well but were just really slow. They just needed practice.

The parents were comfortable with it. If they had a child in Year 2 and another in Year 6 it was all the same format. It is easy for a non-educational person to very quickly understand what the point of it is. It is not like another test, like trying to explain a NEALE or something like that. It takes a lot more input but the DIBELS you can explain very quickly.. this is what we do, this is the information we gain from it and this is what we need to improve if the score isn’t what we would like (Wilma).

5.3.4.2 Power and Determination

Another factor that was not introduced through other cases was personal will power and determination. Diane was the only participant who attributed the success of her project implementation to her determination. Diane stated that because she was doing the course and doing the professional readings, she was the driver of the project. She indicated that she influenced her peers and she owned the project:

I was adamant I was going to succeed. I think I drove it! I also think that I had the principal and the school executive behind me. I was my own driver. I took other teachers with me. I kept on about it and the teachers are still doing it (Diane).

5.3.5 *RTP Factor Presented in the Literature NOT Identified by Participants*

RTP statement 7 – Acknowledgement, recognition and reward for the use of research-based practices will enhance their use.

It was thought-provoking to learn that this was the only RTP factor statement that was not raised by any participant during the exploration phase of this study.

5.3.6 Teacher Insights on the Integrity of Project Implementation

Sam provided a unique perspective on the importance of integrity of the implementation of her project. She stated that as she knew and had built a rapport with her cohort, she believed that the project implementation was easier. She linked the importance of collaboration, flexibility, a research base, implementation integrity, principal and leadership support within her project (15 of the 16 RTP factor statements). Sam identified that the contributors to her projects success also included the status allocated to project and that the project became part of the school policy:

It was collaborative and research driven. The whole review (of the literature) really helped refrain what I wanted to do, I think that made a difference too. Another thing to is, that when I did it, the uni teachers really ensured that we did implement with integrity...You had to be monitoring how it was going... Because it was explicit teaching there was that whole notion of testing. If this child has not quite got there you retest then you reteach. You also needed flexibility in approach.. The other thing really is support from your principal and the Exec that really makes a big difference, just in terms of time and resources and giving it status. That is where it surprised me that it did continue. I really did not expect it would be so ongoing. I think that is because the co-ordinator at that stage was also the coordinator of learning support. She saw what happened and she took it back to the Exec and stated that this needs to become part of school policy (Sam).

5.3.7 Comparison of the RTP Factors Identified by Teachers and Their Reported Integrity of Project Implementation

Sam and Wilma's responses to the data collection tools during the exploration phase of this study identified 15 out of the 16 RTP factor statements. When compared to the depth of information they presented on the integrity of implementation, there was a correlation between the strength of their implementation and the number of factors identified. Mary and I identified 13 out of the 16 RTP factor statements. We also both used assessment standardised administration procedures consistently and monitored the teacher's use of those guidelines. Diane identified 8 and Meg identified 6 out of the 16 RTP factor statements. Diane modified her project implementation to cater for the needs of a secondary setting and Meg reported that some teachers were not interested in implementing the project according to the set guidelines provided. Interestingly those teachers that reported the strongest integrity in implementation within their cases are the same teachers that identified the greater number of RTP statements prior to the literature based knowledge being introduced to them.

5.3.8 *Summary of the Exploration Phase*

The need for various forms of support and the positive impact of a Master's course were clearly articulated by the teacher participants. Post the direct implementation of their research based projects teachers identified elements from 15 out of the 16 succinct RTP statements. These same RTP factors were independently identified by teachers and researchers. Further explanation that links researcher and teacher perspectives in specific research to practice applications is offered in Chap. 6.

In brief, the need for teachers to be able to use projects to address the needs of their students was identified as a high priority by all teachers. Wilma and Sam both commented on the positive effect of their projects becoming part of their whole school policy. This resulted in an increase in status being given to their project which contributed to them becoming an integral part of the school life.

Mary was the only participant who mentioned accessible technology through her comments about web support during this initial exploration stage. Wilma expanded on the RTP literature and identified the positive impact gained through the parental support experienced at her setting. Diane also expanded on the literature through her reference to self-determination. Sam raised the importance of implementing research projects with integrity. Wilma identified how research-based projects can support home and school links and Meg raised her concerns regarding the strong impact of competing demands. I presented the importance of the support of leadership as I attributed the lack of leadership support to the extinction of my project. Meg suggested time constraints and competing demands were the factors that led to the extinction of her project.

Other RTP factors raised by teachers that elaborated on literature-based researcher assertions were identified through this exploration phase. These factors included the benefits of parental support in promoting the use of research-based practices and the advantages of projects becoming school policy. All teachers expanded on the literature through identifying the benefits of replicating the consistency in knowledge and structures learnt through the postgraduate course, with staff at their setting. Reward, acknowledgment and recognition for the implementation of research-based projects was the only RTP factor that was not identified through the exploration phase. The following explanation phase goes further in unpacking the specific details of how those RTP factors contributed to the implementation and status of the projects.

Key Points

- The chapter presented an overview of the RTP factors derived from existing literature that was used for the development of a survey, for the design of interview and focus group questions, and as a term of reference for interpreting findings.
- Sixteen Succinct Research to Practice factors with their implications and capacities within global inclusive contexts are outlined. The reciprocal relationship between these RTP factors include issues of shared responsibility and accountability, resources, consistent and long term support, shared goals, leadership,

technology, depth of knowledge, collaboration and sufficient preparation and its impact on teacher and researcher accountability.

- It set a baseline for the study by investigating what the literature stated about RTP and what the participants found through their unique experiences which were then compared.
- It is very interesting to note that without prior exposure to the literature, participants identified most of the RTP factors identified in the literature. These similarities identified through the practical examples described by participants, supported and expanded upon the literature based RTP factors. Closer investigation of these responses identified connections with 15 out of the 16 succinct RTP statements.
- Teacher knowledge and expertise is essentially supporting researcher assertions and expertise.
- Teachers prioritized the need to be able to use projects to address the needs of their students.
- When research based projects become part of the whole school policy, an increase in status is identified as projects are viewed as an integral part of the school life.
- The support of leadership, time constraints and competing demands are factors that contribute to both the sustainment and extinction of projects.
- Parental involvement can be identified as a support to the implementation of research based projects and was not identified in the RTP literature.
- Research-based projects can support and be supported by home and school collaborations.
- Researchers and teachers are independently highlighting the same factors as being essential to reducing the RTP gap. If key themes and factors are clearly articulated across both domains we must be well positioned to move forward in bridging the well-articulated gap.

Chapter 6

The Explanation Phase

What Matters When Sustaining Research-Based Projects in Classrooms?

It is ... advisable that the teacher should understand, and even be able to criticize, the general principles upon which the whole educational system is formed, and administered. He is ...not expected merely to respond to and transmit external energy; he must be an intelligent medium of action. (John Dewey 1895, as cited in Goldstein 2014)

Abstract This chapter presents a deeper interrogation of the factors that contributed to the success or failure of research-based projects in six different classroom applications. Researcher insights and teacher participant experiences were used to guide the development of interview and survey questions employed in the Explanation phase. The information teacher participants shared about individual projects was compared to the factors identified in the RTP literature to create and modify planned questions that encouraged additional detailed knowledge of how and why individual projects were implemented, sustained or failed.

The chapter is divided into three sections as it presents key RTP themes and strives to prioritise them to determine what matters most when implementing and sustaining the use of research-based projects in practice. The first section presents a brief review of the data collection approaches used during this Explanation phase. The second section presents a summary of the participant responses to the data collection tools, using the 16 RTP statements as a framework. The third section presents a comparison of participant responses across the exploration and explanation phases of the research. Collectively this information builds on the previous Exploration phase by further comparing the researcher generated RTP literature to teacher accounts of how and why key RTP factors had an impact on their research based projects being implemented and sustained practice. It also presents additional RTP factors identified by teachers that were not identified through the literature.

In brief, participant responses were collected individually and then compared and contrasted across cases to respond to the following research questions:

How do RTP factors influence and contribute to the status of research-based projects in inclusive education settings? In what ways do those factors exert an influence?

This chapter:

- presents the results of survey and interviews that examine more deeply those RTP factors identified by experienced teacher participants that influenced the implementation and subsequent status of their research projects.
- builds on the previous exploration phase by extending the depth of the study to identify how RTP factors exerted an influence in each of the cases.
- is informed by individual participant responses to Part 2 of the survey and semi-structured interviews which introduces participants to the RTP factors identified in the literature.
- presents a comparison of the data collected through the responses to the survey items, the written projects and responses to interview questions.
- provides a detailed, triangulated insight to how RTP factors impacted the projects and their status over the 3-year period.
- provides a comprehensive insight into the specifics of what strengthened and compromised the implementation and sustainment of research based practices in classroom applications through detailed teacher quotes.

6.1 Delving Deeper to Enhance Our Knowledge on Ways to Sustain the Use of Educational Practices that Are Embedded in Research

The explanation phase is the second of three phases of this research. It presents the results of survey and interviews that probe more deeply into those RTP factors identified by teachers, that influenced the implementation and subsequent trajectories of their selected research projects. The explanation phase builds on the previous phase by extending the depth of the investigation to identify **what, how** and **why** RTP factors exerted an influence in each of the six cases.

The explanation phase is informed by individual teacher responses to Part 2 of the survey and semi-structured interviews **which now introduces teacher participants to the RTP factors identified in the literature** (see Chap. 3 for detailed descriptions of these tools). The Master's projects, which are accounts of projects written by individual teacher participants, were also consulted as an information source through this phase. The comparison of the information collected through these three methods (responses to the survey items, the written projects and responses to interview questions) provides a detailed, triangulated insight to how RTP factors impacted the projects and their status over the 3-year period. These responses were then compared to the RTP factors identified in the literature and collectively this information builds on the previous phase by delving deeper into the comparison of the RTP literature to teacher participant accounts of how and why RTP factors had an impact on the status of their cases.

6.1.1 Data Collection Tools Utilised in This Explanation Phase

This second phase of the research sought a deeper understanding of what matters when sustaining research-based projects in practice. In order to achieve this, participant responses collected through the previous exploration phase were used to inform the construction of the interview questions used during this explanation phase. Questions were designed to encourage participants to provide a comprehensive and relevant explanation of what, how and why specific RTP factors contributed to the status (success or failure) of their projects.

Given the complexity around solving this ongoing concern regarding the lack of use of available evidence based practices in classrooms, a coherent and rigorous approach to the collection of information was sought (see Chap. 3 for specific details). The use of the same questions, data collection tools and techniques to investigate each of the projects made cross-case comparison possible. The purpose of employing this technique was to increase consistency and produce more specific responses to enhance a thorough comprehension of the impact of specific RTP factors. The following section briefly describes Part 2 of the survey and semi-structured interviews which were used to enhance the comprehension of why some evidence based projects were successfully sustained in practice and why others were not.

6.1.1.1 Part 2 of the Survey

Part 1 of the survey identified details of individual participants and their setting (see Chap. 5, Exploration phase). Part 2 of the survey was comprised of 75 items across three categories: collaboration, support and, responsiveness of research. These areas represented the key themes asserted in the RTP literature as being significant to RTP efforts. Participants were asked to rate whether each of the 75 factors were: blank [B], never [N], rarely [R], sometimes [S], mostly [M], or always [A] present during the implementation and sustainment of their projects at annual intervals over a 3 year period. Collaboration factors represented 23 items and included factors such as mutual respect and shared ownership among stakeholders, and ongoing and substantive communication and feedback.

Support factors were represented by 27 of the items and included examples pertaining to the impact of clear school goals that promote the use of research. Support items also sought to determine if research-based projects responded to genuine questions, problems and solutions. Questions pertaining to the use of student materials, teacher manuals and training were included to gain details on what is required for the effective adoption of research-based projects in school settings. Items linked to teacher preparation sought to establish if the participant teacher education experience had an impact on the use and scalability of research-based projects. Teacher education items also sought to identify if the intentional linking of subjects in the preparation program reinforced key ideas through a clear and consistent approach.

The comprehensiveness, accessibility and practicality of research were grouped in a section titled the *responsiveness of research*. This responsiveness of research section of the survey consisted of 25 items. Data generated from these items sought to establish those factors that enhanced the usability, flexibility and accessibility of projects. The project's potential to be scaled and whether it could address the needs of the whole school are examples of items within the responsiveness of research section.

Participant responses to the survey items were collected once the Master's course had been completed and were based upon their retrospective perceptions of their 3 year Research to Practice experiences (See Appendix 1 for survey). Responses were collected to reflect participants' thoughts (in retrospect), to identify the consistencies or changes in specific RTP factors. Table 3.5 in Chap. 3 presented the RTP factors that corresponded to the questions in Part 2 of the survey and an overview of participants responses to the survey are presented in Table 6.1.

6.1.1.2 Semi Structured Interviews

Participant teacher responses to Part 1 of the survey and the initial open-ended interviews were analysed and then compared with the RTP literature. This information was used to determine the content of the semi-structured interview questions with

Table 6.1 Summary of the frequency of responses to RTP survey by themes

Frequency of response		Year 1					Year 2					Year 3							
		B	N	R	S	M	A	B	N	R	S	M	A	B	N	R	S	M	A
Chris	Collaboration	0	0	0	0	12	11	3	0	0	0	11	9	3	1	5	11	3	0
	Support	0	0	0	0	5	22	0	0	0	0	7	20	0	5	4	15	2	1
	Responsiveness	0	0	0	0	1	24	0	0	0	0	1	24	0	1	5	14	1	4
Mary	Collaboration	23	0	0	0	0	0	1	0	0	10	7	5	1	0	1	1	14	6
	Support	27	0	0	0	0	0	0	2	0	3	8	14	0	1	0	3	7	16
	Responsiveness	25	0	0	0	0	0	0	0	0	0	9	16	0	0	0	1	8	16
Diane	Collaboration	0	0	0	3	11	9	0	0	0	3	11	9	0	0	0	3	11	9
	Support	0	0	5	2	11	9	0	0	3	2	13	9	0	0	3	2	13	9
	Responsiveness	0	0	0	1	13	11	0	0	0	1	13	11	0	0	0	0	14	11
Wilma	Collaboration	0	0	0	0	8	15	1	0	0	0	7	15	1	0	0	0	9	13
	Support	0	0	0	1	6	20	0	0	0	1	6	20	0	0	0	2	12	13
	Responsiveness	0	0	0	0	4	21	0	0	0	0	6	19	0	0	0	0	11	14
Sam	Collaboration	1	0	2	4	8	8	0	0	0	0	8	15	3	0	1	7	7	5
	Support	22	0	2	1	0	2	0	0	1	3	2	21	1	0	0	6	4	16
	Responsiveness	23	0	0	0	0	2	0	0	0	0	9	16	0	0	0	2	7	16
Meg	Collaboration	2	0	0	0	0	21	2	0	0	0	0	21	2	0	3	13	4	1
	Support	0	2	0	0	0	25	0	1	0	0	0	26	0	6	2	9	0	10
	Responsiveness	0	0	0	0	0	25	0	0	0	0	0	25	0	19	0	5	1	0

B No response, N Never, R Rarely, S Sometimes, M Mostly, A Always

the purpose of making them relevant and responsive in order to gain clarity and depth. Examples of semi-structured interview questions included: How did features/elements of the university course have an impact on your knowledge and skill level in promoting the use of research-based projects? Can you describe the leadership style of your principal? A full list of interview questions is located in Appendix 3. In essence the semi structured interview questions were informed by the data collected in the exploration phase to provide a greater understanding of what matters most to research being implemented and sustained in practice.

6.1.2 Factors that Are Vital to Sustaining Research-Based Projects in Practice as Explained by Experienced Teachers

This section presents the insights that teachers provided as they described their own experiences of implementing and sustaining research in practice and compared them with the RTP assertions made in the literature. The teacher responses provided during the explanation phase are presented in three parts. The first part presents a tabulated summary of individual participant responses to Part 2 of the survey. The second part presents a narrative explanation of those RTP factors identified by participants that were collected through both Part 2 of the survey and semi-structured interviews. This section concludes with the presentation of additional RTP factors not identified in the initial exploration phase.

6.1.2.1 Summary of the Responses to Part 2 of the Survey

Part 2 of the survey introduced the RTP factors to participants. Participants rated each RTP factor at annual intervals, in retrospect for 3 years. Table 6.1 presents a summary of participant responses to Part 2 of the survey. The questions in the survey were derived from factors that were extrapolated from the RTP literature. This collection of data presents differences and consistencies in teacher ratings for factors identified in the three key themes over the duration of the project. The themes included collaboration, support and the responsiveness of research.

Mary and Wilma were at the same school and both commenced their projects at the start of Year 2. Although Wilma did not implement her project during Year 1, she responded to the survey items for that year as her project was developed during that year. The questions and individual responses to Part 2 of the survey are located in Appendix 3. The following section presents a general overview of the rankings of factors identified by individual participants within the three identified themes. It broadly presents an overview of the areas of influence, prior to the more detailed

responses provided by individual participants in the subsequent section that uses the 16 succinct RTP statements as a framework.

6.1.2.2 Ranking the Importance of Collaboration Factors

Mary's ranking of all other collaboration factors remained consistent or increased as the project moved through the implementation, sustained, to scaled within and beyond her school setting. Her only significant reduction in rating was for the item asking if there was an awareness of changing stakeholder needs. Diane's prioritized the need for united efforts and consistent feedback and the importance of aligning the same understanding of course structures, goals and expectation between university staff and students (being the research participants).

Wilma identified the importance of aligning the same understanding of course structures, goals and expectation between university staff and students. United efforts that are understood by all were also described as a key factor as Wilma's project was scaled. Sam prioritized the need for strong and united partnerships amongst stakeholders from various levels of responsibility. The importance of aligning the same understanding of course structures, goals and expectation between university academic staff and students received Sam's highest rating during the project planning, implementation and sustainment stages.

The factors Meg ranked as a priority included the need for well-aligned project and school goals and the awareness of changing stakeholder needs. Meg's rankings indicated that although her project had the support of the principal and executive, it did not have the support of all stakeholders. Meg significantly reduced her rankings of collaboration items during Year 3 as her project became partially sustained, prior to becoming extinct the following year.

In summary, Wilma and Sam's ranking of collaboration factors represented the strongest rankings of the six participants during their project implementation year. Sam significantly reduced her ranking of the collaboration factors as her project was scaled within and beyond her setting. Like Mary's, Wilma's ranking of the collaboration factors remained constant as their projects were scaled. Meg's rankings reduced significantly as her project became partially sustained in Year 3 prior to its extinction. My ranking of collaboration factors fell as the status of the project reduced. The lowest score allocated to any theme was allocated to this area of collaboration in Year 3 as my project became partially sustained.

6.1.2.3 Ranking the Importance of Support Factors

My initial strong rankings reduced significantly in Year 3 as the project moved from full to partial implementation. Items that changed most significantly across the duration of the project were those that related to leadership, time and

continuity of support. Mary strongly identified the need for adequate time to be allocated to stakeholders for project instruction, implementation, maintenance and feedback.

Diane responded with rarely to three support items in Year 2 and Year 3. These items included; the stakeholders' active involvement in the program, the awareness of the project leaders on the demands of the project on stakeholders, and the level of instructional support available. Diane ranked highly the items that presented the need for ongoing leadership and technology support. Diane's support for the factors did not alter as her project was sustained and scaled within and beyond her setting.

Wilma's strongly supported the need for stakeholders to experience the benefits of the project and that the positive responses displayed from project stakeholders can contribute to their sustained use. Sam's rankings of support factors reduced slightly as her project was scaled. She assigned her lowest rank of rarely to the item that sought to establish whether regular meetings were held for stakeholders to share their experiences. When asked to expand upon these results, Sam stated that initially she worked with a small group of people and was allocated additional time to work on the project. She further explained that as the project success grew in terms of student gains and stakeholder commitment, an increase in the number of meetings was required without an increase in time allocation. Meg ranked 25 out of 27 support items with always (highest rank) and she ranked the two remaining items with never (lowest rank) during the implementation and sustainment years (Years 2 and 3). Two items allocated the rank of never included the use of technology as a support and the identification of emergent feedback.

In summary, Meg and I allocated the highest rankings of the support factors of the six participants in Year 2 and Year 3, yet our projects were the only ones that became extinct. However, our rankings significantly reduced to become the lowest scores allocated to the support factors for Year 3, prior to our projects ceasing to exist during the following year. Mary and Diane's ranking of support factors remained consistent as their projects continued to be scaled within and beyond their setting. Wilma and Sam's ranking remained strong as their projects were implemented and scaled within their setting.

6.1.2.4 Ranking the Importance of Responsiveness of Research Factors

Mary's priority was given to items pertaining to accessibility, feasibility and practicality of the project. These rankings remained consistent as her project became scaled within and beyond her setting. Diane ranked most items with mostly or always, except for the rank of sometimes allocated to the item about the project catering for variance in staff abilities. Wilma ranked items that were allocated a reduction in rank pertained to accessibility, feasibility and consistency of the project

and the ability to respond to the personal skill growth of individual stakeholders. The number of “always” rankings allocated by Wilma fell as her project was scaled within her setting.

Interestingly Sam allocated her lowest rank of sometimes to two items during Year 3 as her project was scaled within and beyond her school setting. These factors related to the personal growth in the skills of stakeholders and the effective adoption of project features. My rankings on factors that identified the responsiveness of research gave priority to the usability, trustworthiness and accessibility of research-based projects. During Year 3 my rankings fell most significantly in factors pertaining to the fit of the project to my setting and whether it had flexibility in relation to changing setting needs. These factors were linked to the change of leadership in my setting and the ranks reduced as the status of my project reduced prior to it becoming extinct.

In summary, the rankings allocated to the responsiveness of research factors remained the most consistent in five of the six projects. Little change was evident in the four projects that were scaled and Meg’s project that became extinct. My rankings remained consistent as the status of my project strengthened and reduced significantly as my project became partially sustained and extinct.

6.1.2.5 Overview of the Rankings from Part 2 of the Survey Responses

Information presented in Table 5.1 indicated that the projects reporting the highest rankings in their implementation year and the greatest reduction in these rankings were in the cases that became extinct (Meg and Chris). The key differences between the rankings allocated by the participants across cases included a gradual change in support for the identified factors being evident in the four cases that were scaled within and beyond their school settings. The extinct cases displayed a significant reduction in the ranking of factors as the status of their projects within their settings reduced. The exception to this was Meg’s ranking for the responsiveness of research factors, which only reduced slightly as the status of her project fell from sustained to partial sustainment.

The responsiveness of research category was allocated the most ‘always’ ratings by the participants that completed the survey for Year 1. Of the remaining two cases that implemented their projects in Year 2, Mary also allocated her highest ranking of ‘always’ to the greatest number responsiveness of research factors, while Sam was the only participant who allocated her strongest number of ‘always’ rankings to the support category. These high ratings were maintained in all projects as they were scaled within their school setting the following year. The ratings that most significantly reduced during the third year of implementation were Meg’s and mine as the status of our projects became partially sustained, prior to becoming extinct during the following year. The most consistent responses were evident in Diane’s ratings

over the 3 years. The only change in Diane's rankings over this period was a slight increase on the item describing the way the project catered for a variance in staff abilities. Additional teacher RTP insights are described in the following section as we strive to dig deeper and gain additional knowledge that may contribute to solving this complex RTP concern.

6.1.3 Collective Insights Explaining the Factors that Are Critical to the Sustained Use of Evidence Based Projects in Classrooms: What Matters Most to Teachers?

6.1.3.1 Responses to the Extended Survey Questions and the Semi Structured Interviews

This section was informed by the knowledge and experiences shared by teachers in the written responses provided to the short answer questions in Part 2 of the survey. These responses were consulted to refine and finalise the semi-structured interview questions that were specifically designed to enhance our comprehension of the practice based realities associated with implementing research in classrooms and schools. As a result, the verbal responses to the semi-structured interviews clarified and added detail to the written survey responses. The semi-structured interview responses were transcribed and cited throughout this chapter.

The use of 16 separate literature based RTP statements as a framework was a deliberate design to strengthen our comprehension of the similarities and differences identified through the teacher participant responses. The headings in the section below represents each of the 16 RTP statement (introduced in Chap. 5). These responses provided by teachers during this Explanation phase were analysed and a deeper insight into the contextual authenticities of the factors that contribute to research becoming practice is expressed through direct teacher experiences and quotes.

6.1.3.2 Shared Ownership and Responsibility

The majority of teachers agreed that RTP is influenced by the extent to which school based staff can be involved with research projects. Of the six teacher participants, five made reference to how such involvement can result in partnerships that share responsibility and ownership to build a sense of credibility among stakeholders. Diane was the only participant that did not make reference to this factor in her

interview or written survey responses. Meg reported the benefits of shared accountability when staff members voluntarily became involved in the project. She also described a lack of support for implementing the project with integrity from some teachers, as it began to be scaled. My responses presented the benefits of shared ownership whilst it lasted, along with the negative impact of its withdrawal.

Teacher participants expanded on how different aspects, of the joint involvement of stakeholders at their schools, contributed to the status of their research projects. Sam described that when she went on leave the staff at her setting continued to implement the next stage of the project without her, which highlighted the positive impact that a shared initiative can have on the trajectory of projects.

I took a week or two's leave and when I came back they had already implemented it. At first I thought Oh, O.K., but then I thought well they have taken ownership.... Shared ownership. They became effective drivers all by themselves (Sam).

Sam also commented on the importance of ensuring information about the project was clearly understood by staff members to ensure the aims and details of the projects were comprehended accurately. Sam went beyond previous responses to add that the staff took more ownership of the project "as it went along". Mary reported a similar experience as her project unfolded. She added that ownership of her project continued to build as staff became more comfortable with it.

When I started I certainly modelled in both Kindergarten classes. I began to withdraw and then the teachers took up more ownership but not initially. Everybody knows where they are going with it. There is comfort and familiarity (Mary).

Wilma presented a practical way in which joint accountability was enhanced at her setting. She explained that all the staff members who were involved in her project kept a professional journal and that collecting resources by all stakeholders encouraged shared ownership of the project:

They kept a professional journal along the way. We met every week. They would tell me things that were going well and things that weren't. Through the collection of newspapers for reading passages, this brought us together....The resource collection was a really good thing for ownership and collaboration [sic]. This gave us some type of ownership as we came up with the resources together (Wilma).

Meg did not comment exclusively on shared responsibility and ownership. Her description linked the use of graphs to shared ownership as this allowed students to see the gains they were making. Meg extended her explanation to describe that the staff were motivated to remain involved in the project given that the students also owned the project. She stated that as the graphs identified the growth in student ability, they "didn't go back to their old ways, as they saw the value in it" (Meg).

Meg's provided an insight into the events that occurred when staff members other than those who nominated to be in the project were instructed to participate.

Lack of support occurred when the project was up scaled to the primary classes. Some teachers were not willing to implement the strategy in the way it was designed. There was a sense that they were implementing it because they were asked to by the principal. An opportunity was given to all teachers to observe the strategy by one of the original implementing teachers. Few teachers took advantage of this demonstration (Meg).

My responses presented similarities to Meg's insights even though we were at different settings. I described the positive impact of staff that came together voluntarily to identify the specific needs of students and collectively worked toward addressing these needs. I described the importance of equal parity and how it encouraged group interdependence and respect for each other. I also extended on previously shared knowledge about the events that resulted in a reduction of shared ownership following a change in leadership at my setting:

When people were not involved in decisions that affected them and were told that they must do something different that was on top of their current loads, that was a real negative. It contributed to the demise of the project and even staff morale (Chris).

Genuine Questions and Clear Goals

During their semi-structured interviews all participants, other than Diane, reported that projects are more likely to be sustained in their schools when they respond to genuine questions, problems and concerns. During the interviews Mary and Sam went beyond previously collected data to state that a shared language, which was comprehended by all stakeholders, was essential to enhancing effective communication. The identification of clear goals that were supported by staff was also reported to be a beneficial to implementing and sustaining school-based projects.

Open dialogue allowed the freedom to bring in something that was very new. It was seen that we were looking at the research. Helping teachers by sharing some of the current research. We certainly did that in our staff meetings. This encouraged enthusiasm. It (use of research-based programs to address reading concerns) became a big focus in our school as it was what our kids and teachers needed (Mary).

Sam reinforced this need for common goals and regular communication between stakeholders. Like Mary, Sam confirmed that a collaborative environment requires a common language that is understood by all stakeholders. Sam went further and explained that as a result of her RTP experience she discovered that collaborative environments might not always be harmonious. She suggested that respectful disagreeing might be required to establish clear goals and push boundaries.

To me a collaborative culture is where you've got people who are building a community of practice. You need a shared language, you need to be working together towards the same goal and I guess if it is a community of practice I guess it doesn't necessarily have to be smooth running. I am someone who does not like to ruffle peoples feathers. I like things to be all harmonious. You realise that to make things happen and to bring about change you sometimes need to push the boundaries. You can't do it without that shared language. That is what I was trying to do in the school. I was building that shared language with explicit teaching and also understanding what phonological awareness was. It was different to phonics and people needed to have a deep understanding of it (Sam).

Wilma verified the importance of being part of the team that was united by the common goal. She went beyond her responses in the previous phase to explain that

this unity evolved as a result of effective communication and that her presence in the classroom made her more accessible and valuable to other staff members.

Being part of a team and setting realistic goals just evolved, so I think that it was because open communication was part of the project. Being in the classroom made me more accessible; this helped (Wilma).

During the second interview Meg restated the outcomes of the project in terms of student goals. She expanded on this to include the importance of parity when working toward these goals.

As far as the project goes there was parity between the teachers, and myself we had a common goal and we could all see the value in it in terms of children's outcomes (Meg).

When asked about her reduced survey ratings allocated to items about stakeholder unity in Part 1 of the survey, Meg described the result of the school executive's decision to scale the project without involving other stakeholders in the making of this decision. Meg explained that the decision to expand the project, due to its success, was made at an executive meeting and there was no consultation with other staff members. She explained this resulted in subtle negative responses from a small number of staff members. They did not appreciate being told, rather than asked, that they were going to implement the project.

Meg explained that as time went on the original staff members remained committed to the project and continued to implement it with success. She described that the unity of staff members and communication opportunities did not continue to develop with the expansion of the project. Meg went further and stated that although the school and project goals were aligned, the lack of support and ownership contributed to the project's extinction.

I reported in the survey that when the goals of the project were jointly established by the staff, respect and equal parity amongst stakeholders was strengthened. This was extended through the second interview as I confirmed the results of systems, schools and staff working together toward the shared goal of promoting the use of research to address the needs of the setting. The following provides an account of what happened as the united approach deteriorated.

As more people came on board and worked toward the project goals its momentum increased. I think as people saw it working they wanted to be part of it. People knew what was involved and that it was manageable so I guess the collaborative culture of respect for the programs goals and each other's efforts just grew. Unfortunately, this collaborative culture just came to a sudden stop when we lost the three top leadership people at our school. We lost our principal, deputy and REC at once. The system put in a principal and deputy from the same school. They had no commitment to the project or its goals, yet said we could still run it but all resources, time and supports were withdrawn. So really the project had no real hope and became extinct (Chris).

Scalability

All participants made reference to the way in which projects were scaled in both the surveys and second interviews. The status or standing of projects within the school was reported to have a strong impact on its ability to be scaled. Participants explained that if the scaling of their projects had been considered prior to their implementation, a greater likelihood of sustainment and exerting whole school influence would result. Diane commented on the practical implications required in the scaling of her project to facilitate its sustainment in the high school setting.

The AP (Assistant Principal) would deal with all the practical issues. We needed him to work around the calendar, excursions, incursions and exam timetable. Because of the demands of a high school, if the program wasn't a priority it would get lost. This contributed to it being of high status. You knew you had succeeded when something was excursion and incursion free. This means if it was a priority, it was put into the school calendar and all excursions and incursions had to be worked around it. When things get to that stage they have a very high status and are embedded into the culture of the school (Diane).

Mary's survey responses reported that reading was a priority of the school and was valued by her staff. During the interview she further explained that her project used standardised measures to address the school's priorities. Mary repeated that this increased the status of her project and added that it enhanced its scalability. Wilma confirmed Diane's earlier comments about the value in using hard data to present student improvement. I also made reference to the projects potential for scalability in terms of rigor, benefit to the students and ease of implementation. The following quotes provide specific explanations and examples that went beyond the data collected through the previous phase.

The staff valued it because it is standardised and it gives you great data. We were all part of the planning. As the school's main focus was on reading, this certainly gave it a lot of status and standing. In terms of the school's priorities it (the project) was high. It is written into our school assessment plan. It was valuable. It helped. It was not a new fad (Mary).

It was recognised as something of value and that's also why I believe it was adopted. It proved itself. It evolved and results identified the high level of improvement in students. You can't back away from that. That is hard data (Wilma).

The intensity and rigor was different. It was clearly beneficial and easy to implement. This helped it to be incorporated into the life of the school. It was owned by many and that was because it was of benefit to the kids. It was even useful at parent teacher interviews. It also gave the parents faith in our teaching and us. This gave it scalability potential (Chris).

Both Sam and Meg identified factors that were not mentioned by other participants in terms of the projects scalability potential. During the interview Meg did not respond exclusively to the scalability question. She made reference to the principal in her comments on the scaling of her project and did not separate the factors.

The principal was very allowing and it (the project) was given status because it was taken up and scaled. Yes it was up-scaled because it was encouraged by the principal (Meg).

Sam reported on the intensity of the focus of the schools priority during the interview. Her response captured the sentiment of all six cases when she suggested that if projects displayed successful outcomes, they gained traction. Sam extended this response further and stated that the project was strengthened if it became part of the schools policy.

Intensity of the focus on the project is key to giving the project status. It is the intensity of key priorities. If it falls into a key priority, it seems to get more traction. It was the end of that year where the executive said this is going to part of our school policy. It became a greater priority as the success was evident (Sam).

Substantive and Ongoing Communication

All participants reinforced that their projects were enhanced when communication and feedback from many stakeholders, from all levels, was ongoing and substantive. All explained that feedback and communication that occurred throughout the project was more effective than if it had been given at the end. Many comments made reference to the need for ongoing communication between stakeholders and how communication emerged as the projects unfolded. The following reports went beyond these broad claims to identify **how** communication occurred in the school settings. Mary and Sam both referred to the meetings at their schools and Sam reinforced the importance of stakeholders having a common understanding of the language used. Diane reported on her use of technology to constantly communicate with her high school students. Wilma reported that a reduction of structured opportunities for communication was required as the project unfolded due to the increase in informal feedback and conversations.

We would email to communicate with each other all the time and the kids used technology to work and gain results (Diane).

Communication was open, all ideas were welcomed and everybody had an opportunity to discuss things. People were pretty contactable and comfortable. Meetings were held looking at resources, research information and general practical details. So there were opportunities for regular analysis and constant feedback and we could all grow from that (Mary 2009b, p. 4).

Sam's written survey responses linked communication to multiple factors. Sam stated that communication enhanced teacher enthusiasm through "collaboration, positive student outcomes, shared pattern language and building a community of practice" (Sam). During her semi-structured interview, Sam provided additional information explaining how effective communication was enhanced.

The start of the project involved face to face meetings with the teachers. There were weekly meetings. I tried to keep them informal because I didn't want to put any pressure on people. Each week I got them to fill in an interview sheet to assess any problems they may be having or what I can do to support them. You couldn't do it without that shared language. That is what I was trying to do in the school was

build that shared language with explicit teaching. Some meetings were informal at the start but when we got down to the professional development it became more formal and power point presentations were used. In small groups there was a lot of interaction and discussion. We talked about what the teachers already knew and what their interest in the project was. There was respectful disagreeing, constant feedback all the time and constant modelling (Sam).

Wilma's survey responses continued to identify and expand upon the importance of communication with parents and support staff.

As the project went on there was a lot more talking between teachers, so there was less need for big meetings. The fact that people wanted to use it showed that the project was working and when the principal wanted it as part of the entire school assessment plan, no one ever said 'no, we don't want it'. So everyone was happy to take it on. So it was a combination of the timing and that it fitted the need for a more structured assessment plan perfectly. It catered for the need that was there. No structured feedback was needed as realistically if people didn't want to use it, they wouldn't have asked us about it (Wilma).

Consistent Long-Term Support That Considers the Personal Qualities of Stakeholders

Various examples of support that enhanced the implementation and sustainment of research-based projects across a range of school settings were described. Examples included, descriptions of the positive effect of the long-term support derived from being part of a cohort of graduate students, and the impact of using graphs to identify student gains. Three participants offered extended responses to identify the difficulty in disseminating passion for the project and how enthusiasm within a staff can spread with an increase in depth of knowledge in relation to project goals and procedures.

The following narratives expand on the survey comments to present how the impact of support was generated from different stakeholders. Diane reported on practical elements such as the need for space to run her project.

Well we had the principal support but we needed the support of the librarian as well. We needed a big space as 50 people were involved. It meant we had to close the library. There was a little negativity, but it was OK as everyone was involved. It actually took on a life of its own. Everyone was on board so I think that whole community ownership was the strongest support (Diane).

During the interviews Diane, Sam, Wilma and I reinforced the strong impact of various stakeholders including the librarian, coordinators, colleagues and others in the sustainment of our projects. The following quotes present insights from a range of stakeholder perspectives.

Being part of a cohort is really good. I was lucky because two of us were implementing it at the school. That made a big difference. You weren't on your own (Sue).

The other person who was mostly involved was the Stage one coordinator. She was a driver who took it on and helped to sustain and scale it because she could see

that it was effective. As the year went on, the Assistant Principal also became very supportive as she had a strong focus on early intervention. Those two people carried more than the Principal. They both had a strong background in literacy and early intervention. It became a greater priority as the success became evident (Sue).

During the interviews Wilma and I reported on the impact of support generated by personal qualities, such as teacher enthusiasm and the way in which this enthusiasm was shared. Comments in response to the support category were extended to link depth of knowledge and staff enthusiasm to this factor.

Staff enthusiasm just grew quickly as this project was something that really addressed a need that was reoccurring. The depth of knowledge on the project was another essential. It would not have worked without a deep understanding of how and why it was conducted the way it was. This also fostered enthusiasm, which drove it. The results themselves provided hard and fast feedback. People were engaging in professional dialogue constantly. The team would also attend staff meetings and provide feedback on various features on a regular basis. This ongoing interaction encouraged people to want to be on board and we could modify features of the program as we needed to (Chris).

Often people are passionate about something. They drive it but it is hard to disseminate that passion to the whole school unless it is valuable. But then you remove that person and the whole thing goes to nothing. It just disappears. I think people were just ready for a change. It came in at the right time and people could see that it was valuable and that it was actually helping them. Because teachers are such busy people, things can't take more time. With the DIBELS, they could see it was a quick assessment tool that showed them growth and they were able to act on the data that they got. Teachers also didn't have to take any money out of their class budget. They are tiny things but sometimes it is only little things like that that can pull things apart (Wilma).

I think the biggest support for me was the battery of knowledge I had behind me. You can't teach people unless you have the research and theory behind you. When you do go to implement it and you have the knowledge you can feel comfortable because I thought I knew what I was talking about at that time. That was the biggest thing for me (Wilma).

All participants' explained that the projects themselves and their features became a support in school settings. Mary's insights reflected the sentiment of four participants as she reported that the quick administration of her measures supported her schools concerns about limited time. Meg's comments supported Mary's use of graphs to display student results which enhanced enthusiasm amongst the teachers. Wilma's report was reflective of the occurrences at five settings once the positive results that supported teacher and student needs became evident.

Teachers became familiar with the materials and how quick they were to administer: 3–4 minutes per child compared to all the measures they were using in the past that might have taken up to 20 minutes. They could assess and reassess again so you see growth as the measures were so user friendly. I had very good teachers who were very open to it. That really supported me in the long run. I had a depth of

knowledge and I could organise and co-ordinate others and that was a support really to others as well (Mary).

People could see that it was working. It spread through like word of mouth. Then all of a sudden everyone wanted to use it, which wasn't necessarily what we intended to happen – we originally wanted to gradually increase use as positive results were seen. Once the ball started rolling you just couldn't stop it, so we just had to do the best we could. In retrospect that was a negative, because it went so fast, but then we turned it into a positive (Wilma).

Basically by putting all the data on a spread sheet and highlighting. It was very visual. People could see it is working. They could see the growth within a couple weeks. I gave this feedback to the parents as well. If we are increasing the parent knowledge that almost increases the schools accountability. These parents were very supportive of the project (Mary).

Meg went further to provide a practical example describing how she was able to disseminate her passion for the project through the use of graphs. She also commented on the support gained from the parents of children involved in her project, which she originally identified in her response to the survey.

I had great depth of knowledge and passion and commitment. This was not easy to transfer to others but I graphed the student results so that the teachers could see them every week. This helped as buy-in and enthusiasm increased because of the knowledge of it's success. Parental support was also great as they could see the kid's success (Meg).

Mary and Diane were the only participants who went as far as proposing long term approaches that the education system could do to support the implementation of projects in schools. Comments were also made on ways the knowledge gained from the implementation of research-based projects could be shared with others to promote a prevention rather than cure approach to learning.

Mine was literacy based. I am sure other peoples' projects especially the high school people that were on behaviour and stuff like that; it would be so useful for us to hear. I mean at one stage when Lyn (Head of Special Education) was there, it was mentioned that we might do some talks and presentations but then everything changed in the office, so new personnel had other agendas (Mary).

Systems could provide funding to schools to access experts to come to the schools to give professional development to the whole staff (Diane).

I never was asked when it was finished for any feedback on my project or any information at all. In actual fact, as time has gone on, I feel that they would not value my project at all. We have to get the projects out there as prevention is better than a cure (Mary).

Resources and Training

A range of perspectives on the vital importance of training and resources to the success of projects was reported by all participants in both the surveys and interviews. Meg's survey response represented the sentiment of three participants when she linked training to the benefits of standardised information.

Training was easy as we used the standardised information to empower instruction (Meg).

Mary commented on the preparation of resources and the benefits in providing simple and easy to use resources. She also reported on how visual resources were created to assist in ongoing training and development.

I initially prepared all of resources in my own time as I really did not want to say to the teachers you have to get the resources ready. My aim was to make the project work. I believed in it strongly and I really wanted to transfer it to other people. The materials were all user friendly and you have all the instructions in front of you in bold. Then by putting all the data on a spreadsheet and highlighting it, it became very visual. People could see it is working they could see the growth within a couple weeks. So the training was ongoing and we developed along with the program (Mary).

Sam was the only participant that promoted the need to identify the readiness levels of stakeholders during this phase.

The key to successfully training our staff was finding where they were at and moving forward from there (Sam).

During the interview I expanded on my survey responses to present an account of the benefits in using technology when training staff in research-based projects. I was the only participant to report on what occurred when required well developed resources were removed.

The whole online information and data entry/access system was great. You would do training at school and then teachers would go over things online in their own time. It was relevant and they could easily get standardised results to empower your teaching. This feature really helped the training of our staff and the project gained traction over time. We were at the stage when teaching was becoming more informed with the use of results when the program came to a sudden halt. The new principal and deputy had no commitment to the project. They didn't want to know about it and said we could still run it but all resources, time and supports were withdrawn. Without the required time and commitment the project began to lose the gains that were made (Chris).

Reward and Acknowledgement

Although the importance of recognition and reward for the implementation and sustainment of research-based projects was identified in the RTP literature (see literature review), no participant commented on this factor during the explanation or exploration phase. Meg was again the only participant who mentioned a lack of financial reward for the time required for the implementation and sustainment of her research-based project. No other participant reported on the need for recognition and reward for the implementation and sustainment of research-based projects during the exploration and explanation phases. The following quote was the only comment that made reference to the reward and acknowledgement factor during this phase.

I was working part time. I was meant to go in 3 times a week but I was going in four times a week during the project. There wasn't any support financially, but I

suppose I didn't have to go in the whole day. Sometimes I could leave around lunch-time. But I was going in the extra day to prepare because you had a lot of resources to organize (Meg).

Technology

All participants acknowledged that technology has many functions that can help make RTP more efficient. Only two participants out of six reported that they used technology effectively. Diane reported on how technology was used in her secondary school setting as an effective source of motivation and communication. I reported on its advantages when communicating and online data entry.

I bought a comprehension program, so the kids would read the book and then they would go on the computer to answer the questions. So the kids saw their results instantly and I would keep a record. It was also used to gain information from teachers. Like a kid couldn't come to reading today, so I would email to communicate and we would use it to communicate with each other all the time. The kids used technology to work and gain results. It was good to communicate. I also have a database that the teachers can access. It has the kid's results. Pre and post-tests are there to see improvement. It also allows the teacher to see if a child has been tested (Diane).

The benefits in using technology to simplify data entry and communicating with parents were expressed. Yet concerns relating to the reliability of school-based technology were also reported. The whole online data entry/access system was great. You could easily get standardised results to empower your teaching. It was used to enter data, collect knowledge but it could have been utilized more effectively, I'm sure. The thing with technology at school level, is that sometimes it lets you down. So you don't want to be totally dependent on it. It could be used formally in feedback from parents, students and peers quite easily, but you would need time to do this or it may not happen (Chris).

Mary's written survey responses reported that the materials required for her project were easy to download. Yet during the interviews Mary and three others, Wilma, Sam and Meg, identified the benefits of technology yet they explained that they had not used technology to its full potential. During the interviews they presented the ways they could have used technology more effectively to enhance the ease of implementation of their projects and to provide avenues for feedback.

All the DIBELS results are on our M drive and accessible to everybody. Technology could have even been used even more with all the resources and all the materials available online (Mary).

The only way I used technology was to print out the surveys and my power point. I could have used it more to communicate with staff and have resources available for them (Meg).

I could have put surveys on line, used it to monitor the kids and that would have made it easier to store the data. The actual teaching would have been easier if I had it all online. It would have been there for whoever needed it. It would have been

better for the sustainment and scaling really because it would have all been there. Technology could have helped the system become more self-reinforcing. It would help people in the future (Sam).

It wasn't a big aspect of it I must admit. The only thing really where technology was involved was to keep all the data in one place. We used it to track the kids. If we were doing it now I would probably link it in with the schools wiki and I could definitely use that easily. Kids could have put their feedback on that instead of giving hard copies to me. Even surveys could be there also, of their reflections. They could even put that on the blog (Wilma).

Five of these participant responses collected through the second interviews went beyond previously collected data to identify that when technology is accessible and reliable it can be used by stakeholders to enhance the implementation, sustainment and expansion of research-based projects in school-based settings. The benefits afforded by the use of technology were identified in those cases that continued to become scaled and extinct.

Projects Viewed as Credible by Stakeholders

All teacher participants confirmed that the uses of research-validated approaches were enhanced when stakeholders viewed their outcomes as credible in their ability to address genuine needs. During the second interview Mary and Sam's responses reflected the views of all other teachers. Mary confirmed the benefits of projects having a clear direction and Sam again reported on the benefits of increased participation as project credibility through student success became evident.

We have had so many projects come and go over the years. This was different. They could see exactly where it was heading and that opened up expectations straight away. You could see growth and that made a big difference (Mary).

Teachers became more involved as it went on as they could see it become more and more successful (Sam).

Wilma's response expanded upon these responses as she confirmed that when projects were identified as valuable by eliciting positive student and teacher responses, they were more readily used and supported.

It was recognised as something of value by students and teachers and that's why I believe it was adopted. It proved itself. It evolved and results were seen due to the high level of improvement because of the high level of consistent instruction (Wilma).

Limiting of Competing Demands

There were no direct responses made by participants that exclusively reported on the limiting of competing demands. All participants described the impact of a school's leadership team in terms of the way they prioritised the projects within their schools. They reported that when the school leaders positioned the project in

the school timetable or gave the project status this contributed to a reduction in the competing demands placed on practitioners, as the projects were being implemented and sustained. Three participants also made comments on the importance of sharing the ownership of the projects when expressing their thoughts about the need to limit competing demands if projects are to be sustained in school's.

During the interview, Diane went further and stated that she required the support of two principals who had different leadership styles. She reported that she had the time to implement her project and she wasn't overloaded as her project was viewed as a priority. Diane indicated that this contributed to the scaling of her project within her setting.

I had to get the support from 2 principals as we had 2 sites. One was the 7–10 principal and the other was the college one (Year 11 and 12). The college one was into data and the other was a people person and very laid back. The data driven principal was a forward thinker and planner. The other one was very relaxed and would communicate well with the parents. So between the two of them I guess we had a balance. It was great as they gave me the capacity and time to do what I needed to do and I wasn't overloaded with additional tasks as this was a priority in their eyes (Diane).

During the survey Mary provided an account of a unique experience that was not shared by other participants. She reported that her first principal implemented the project in the new setting when she had moved on and her second principal delivered the project if she became overloaded. Mary suggested that this contributed to her project being scaled within and beyond her setting. Meg reported that her principal gave the project status and was realistic in his expectations from his staff and this reduced stress levels generated from competing demands. Meg also described an experience that was unique to her project. She explained that her principal and executive team decided to increase the project's status within the school prior to it becoming extinct that same year.

Executive support was very good. My AP was very interested in this area. She has since moved on. As Principal in the Wollongong diocese she has introduced it down there. Our new principal was very open to it. He was supportive and even administered it to our Kinder himself. He knew what was involved and was fair, so we could go to him for help if it (the load) became too much (Mary).

The principal gave it status because he knew it was going to help the children. That principal was flexible and supportive. He was a people person not a taskmaster. The teacher's morale was always high. The students would then benefit from that. He was realistic in what he expected from us when we implemented the project (Meg).

Sam's comment on her principal giving her project status and limiting competing demands was reflective of the sentiment shared by three others. Sam explained her principal acknowledged the time and effort required when implementing the project. She added that this contributed to the development of a culture of appreciation amongst the staff. Sam's survey and interview comments combined to identify the support of her leadership team in contributing to the increased status and scaling of her project.

Our principal was someone who was happy to disperse control. He had a lot of trust in people. I felt he had trust in me. If you went to him with an idea he would let you run with it he would not need to micro manage it. He gave it status in the school and was very supportive. He did acknowledge what we were doing was significant and so everyone appreciated the time and effort that was involved (Sam).

Wilma's interview comments were less specific but captured the opinion of all six participants. She reported that her flexible principal allowed staff to take time to assist others when required and this reduced the pressures of competing demands when implementing her research-based project at school.

We had a good solid leadership team. Our Principal was very resourceful. I think he was really dynamic and flexible. He was open to new ideas and listened to your opinions on the project. He wasn't entrenched in any fixed style. He was never dogmatic, so that took a lot of the pressure off I think. The fact that people wanted to use it showed that the project was working and when the principal wanted it as part of the entire school assessment plan, no one ever said 'no, we don't want it'. So everyone was happy to take it on. So it was a combination of the timing and that it fitted the need for a more structured assessment plan perfectly. It catered for the need that was there and we were given the flexibility and time to help others when they needed it (Wilma).

The reports of five of the six participants described ways the support of the school leaders contributed to increasing the projects status within their schools. Of these five cases, four became scaled within and beyond their school settings and one (Meg's) became extinct.

During the survey and interview I reported on the positive impact the support of the first two school leaders had on the sustainment and scaling of my project. I then provided a contrasting report not experienced by other participants about the negative impact a third principal had as he added additional expectations to staff requirements. The third principal reduced the support and time allocated to implementing the project and introduced additional expectations. During this phase additional details were provided on how the third principal worked with the same stakeholders, within the same setting as the previous principals, yet his influence on the project was different.

As more people came on board the momentum increased. People were literally asking if they could do it after they understood the details as it could lighten their loads and benefit them and their students. The project became a priority as it addressed our needs so were given time and resources to scale it up. It scaled very quickly. Much faster than planned. We had three changes in principal. The founding principal was brilliant and firmly believed in distributive leadership. He strongly supported the project as it would make the staff lives easier and it would really help the students. We then had a new principal and she was also great, even though she was finding her feet she was driven by the needs of the students and continued to keep the project as a school priority. Then we got another new principal, who had a very directive style. He was very driven by things looking good and his drivers were so different. We even showed him the standardized data that display real growth, but he and the new deputy were not interested, they had their own agenda. So really the

project had no real hope. Quite bizarre really. The same setting, same project, same kids etc. Consistency in all details, yet new principal 3rd time round, can destroy 3 years work with a very short time. They didn't say you can't do it. It was, "there is no time to do that any longer and here are additional things that need to be done" which obviously directly contributed to the demise in a smart and directive way (Chris).

This semi-structured interview response added clarity to the written survey response that reported:

the support for the project increased as the demand for the project increased. In the final year of the project with the change of leadership, support was withdrawn from all areas, which increased the demands placed on all of us. Shared ownership reduced as competing demands and directions changed the project status. A collaborative sense within the school was replaced by a directive, authoritarian leadership approach (Chris).

This report identified a sequential relationship between factors, as I was not able to isolate them to directly respond exclusively to the factor identified in the interview or written survey questions.

Wilma's short survey response statement summarised the sentiment of five of the six participants about the way in which concerns about competing demands could be successfully addressed in school settings. Meg was the only participant who did not express this consideration. "Because it was part of the school day it wasn't seen as an additional demand on the teachers" (Wilma).

In brief, all participants were unable to separate comments about competing demands from principals or school leaders. Participants constantly referred to the school leaders as having a significant ability to influence the status or priority of the projects within the school settings.

Sufficient and Ongoing Instructional Time, Preparation and Resources

Sufficient time to prepare resources was reported to be essential to the implementation and sustainment of all projects in both the surveys and interviews. Working the projects into existing school timetables was also reported to have a positive impact on the promotion of research-based practices in schools by five of the six participants during the semi-structured interviews. The following examples present the cross section of ways in which individual participants addressed practical issues. Of these five accounts, four became scaled and Meg's account, (which stated she worked the project into the timetable of her colleagues), was the only one of the five to become extinct. A single account of the difficulty in maintaining projects once supports were withdrawn was also presented. This project went on to become extinct once the support including time and resources were withdrawn. The following quotes provide an insight into how the same factor can work toward positively or negatively contributing to the status of projects.

The AP would do all the practical issues. We needed him to work around the calendar, excursions, incursions, exam timetables. If the program wasn't a priority it would get lost (Diane).

The loads were shared. The Special needs team did all the data entry and copying. It was appreciated, so it was worth it. Time was allocated and it became part of the literacy expectation, so it worked in very easily (Chris).

Schools are so busy especially in the beginning of the year. I implemented the actual teaching part of it during the literacy blocks so it was worked into the timetable from the onset (Mary).

In the implementation phase, the time that I had to spend that was a real bonus. Nobody minded that I took time from my normal teaching load to focus on the project (Sam).

We couldn't run it when all resources, time and supports were withdrawn (Chris).

I worked in with their timetable (Meg).

This interview comment by Meg followed her survey response, which reported that she was a part time employee and would come in on her days off to prepare resources, as this was important to its success.

During this phase other participants shared the sentiment identified by Wilma in her previous phase. They confirmed that as the projects continued, informal staff conversations proved to be very beneficial. Time for ongoing formal and informal conversations contributed to the sustainment of projects. "As the project went on there was a lot more talking between teachers and they would help each other as it was needed" (Wilma).

Complete, Practical and Accessible

Participants confirmed that research-based projects that have a complete implementation strategy through being comprehensive, comprehensible, accessible and practical were more successful. All participants linked this factor to the teacher education course as they stated it modelled how the aforementioned features were woven into the design of the course. This was consistently cited as an impact on the way participants took up the task of developing their projects. Participants reported that they modelled their project design on their course experiences to engage all of the parts of the project, in the expectation that this would have a reinforcing effect, which could further enhance project success.

Wilma and Sam reported on the need for the whole package when implementing research-based projects in schools. Singular, separated components are not enough. Diane reported that the course, like our projects, had a life of its own. All participants referred back to the course experience when they reported on the way to make their school-based projects practical and complete. In the following quotes participants went further in explaining how projects were complete, practical and accessible. In their responses not one participant isolated these factors in their interview responses.

At school in practice, they want the whole package. They don't just expect one thing. They didn't only need the content. They needed to know why and we could

answer it because of the course structure and depth of the course. We had the graphic organisers that helped the more visual learners like myself go step by step through the task and get to the endpoint. The step-by-step structure of the course was huge. It was a main feature and so effective. So I then used a similar complete approach to implement my project at school (Wilma).

I think they embedded things right from the start. It was heavy going and we were coming from so many different worlds. We lived and breathed the course. It had a life of its own. It was the readings, the research, the collaboration and then we would put it into practice at school. It was putting the research into practice without us even knowing or realizing it (Diane).

It was the way it was scaffolded, the spiralling effect. I did a previous course in action research and I found this quite difficult, as there was no structure on how to do it. I found this a completely different experience and I followed the same process when I implemented my project. It was the whole package (Sam).

Teacher Education

Many comments in the previous section reported on the capacity of teacher education to prepare participants to be better able to implement and sustain research-based projects within school settings. During the interviews all participants expanded on these statements and their survey responses to report on how the teacher education experience contributed to their ability to promote selected projects within their settings. There was a consensus in reports that when content and units were intentionally linked, they could reinforce key ideas that enabled students to build a depth of understanding. All six participants also suggested that when courses directly responded to teacher needs through a clear and consistent approach, the projects had a greater likelihood of success.

Meg, Mary and I reported on the totality of the teacher education experience. These three quotes were representative of all participant reports that indicated that the TE course from which the participants graduated, provided a context for involvement and the acquisition of deep knowledge and experience. A description of the successful completion of the course was described as being predictive of the successful implementation of research-based projects within schools.

I think all the assignments that we did, were exactly the way we needed to follow through with the project. We had to do the theory side and the practical side of it, there was always three components to every assignment so you knew you were going to have the differentiation component. You had to go into it so deeply to understand it. You had to know the theory. So I think that is what helped you in the project. Because you knew why you were doing everything. You need the total package. The depth of knowledge really came out in our projects (Meg).

You actually lived and breathed what you were doing and were drilled about the whys and where-for of what you were doing. It was not enough to know specific features. It was all encompassing, and you had to know everything. If we didn't succeed in the training camp, it was like we would never succeed in practice. It wasn't for the faint hearted (Chris).

I think the biggest support for me was the battery of knowledge behind me. You can't teach people unless you have the research and theory behind you. When you do go to implement it and you have the knowledge you can feel comfortable because I thought I knew what I was talking about at that time. That was the biggest thing for me. That level of knowledge was huge to implement the project. If we didn't do assessment, collaboration etc. we would never have everything come together at the school level or even class level (Mary).

During the second interview Diane, Sam and Wilma went further and commented on how the knowledge and experiences continued through their personal journey at school. Sam outlined the benefits in being part of a cohort and Wilma described the importance of personal traits such as resilience.

We did the same thing. We followed the program. We relived the course in our setting. We did what we did in the course at school (Diane).

It was such a sudden impact. I would take the teachers at school along with me, not physically but along the learning journey (Diane).

We were taught a holistic structure to support staff. You already had the skills. You may not have realised it at the time. Being part of a cohort was really good. I really think that course built capacity. It gave you the skills to engage with the people and to build their capacity and you did it without even realizing that you were doing it. Looking back, without even realizing it, you learnt how to build capacity. You learnt how to collaborate without even realizing it. We set about getting our masters then. Then we got all those meta skills without even realizing it. If we hadn't done all that collaborative stuff, we wouldn't even have learnt how to deal with all that stuff (Sam).

The depth of knowledge definitely played a key part in completing the project, Resilience as well. By the end of it, the project highlighted our profile in the school. They began to recognise that she knows a lot in this area, and is able to adapt also if need be and be very resourceful. It did raise our profile, which was good, because we knew what we were talking about (Wilma).

Sam was the only participant who reported concerns regarding the sequencing of the delivery of information during the teacher education course. She then offered ways in which the TE experience could have been more beneficial.

That was a flaw in the design of the project probably. We were doing that thing about the self-organising school at the same time, but really we should have done it before that. If you completed that unit first, rather than doing it all at the same time, it wouldn't have been so overwhelming. So if I started another project now, I would take that knowledge into account (Sam).

Collaboration

Participant reports continued to reaffirm that the teacher education experience contributed to teachers feeling sufficiently prepared. In response to collaboration questions participants consistently referred to their teacher education experience. They described how research-based projects can be enhanced when teachers and

researchers work together to develop links between theory (researchers perspective) and practice (classroom teachers perspective). “You are tapping into personnel experience between people who have the link between research knowledge and classroom based instruction. It was so valid we just need to get it out there” (Mary).

During the interviews Diane reported on how she gained respect from her staff due to the knowledge she had accumulated from working with researchers. Mary, Sam and I reported on the ways in which we engaged with people from our school setting along our research journey.

I came with facts and figures and hard evidence. Because I had done all the reading I had all the knowledge. It sounded like I knew what I was doing, so that helped with the collaboration and respect from others (Diane).

We were engaged in the course and the research from the start, so we could then engage people as required. We needed to make sure they were familiar with all of it. What the expectations were. They needed to be confident at administering the probes (Mary).

The way the tasks were broken down in the assignments. Do this little bit then the next. The rest was practical. There was constant feedback and collaboration all the time and constant modelling. This was what we needed for it to play out in our real jobs (Sue).

We had SDD days, sessions, readings, consistency and feedback. Opportunities to make the project manageable, easy, productive and meaningful. We stretched them out of the comfort zone and engaged them in new learning just like the course did for us (Chris).

Sam’s report represented the sentiment of all when she provided a summary of the completeness of the teacher education experience and its effectiveness. Claims that the course provided participants with the structure and depth of knowledge to effectively collaborate and communicate key learning with school-based staff were repeated. All participants were united in reporting that their teacher education opportunity strengthened the implementation and sustainment of their selected research-based projects in their schools. None of the participants reported on collaboration exclusively in their survey or interview responses. Meg went on to suggest that collaboration could have further been enhanced through the sharing of the wealth of knowledge gained with those other than school-based staff.

By replicating what we had done in the course was the biggest feature. The course was modelled so well. The whole course was collaborative and was embodied into a theoretical framework. The other really big thing in that course was the whole professional language around inclusion. It is not superficial it was that go deeper [sic], it was actually going deeper and it is the total comprehension, the language, the living of the course (Sam).

It would have been good to gain the knowledge on what everybody else had done in their projects (Meg).

Meg was also the only participant to describe that the reduction in the collaborative culture at her school was due to it being restructured to cater for open classrooms. She also stated that this collaborative culture was reduced when her principal instructed the primary teachers to implement her project. I linked the deterioration

of collaboration to the reduction of support and introduction of competing demands from my new leadership team. Of the six cases that identified the strengths of collaboration on the status of the projects, Meg's and my case were the only two that became extinct. Our reports described the reduction in collaboration as the projects moved from sustainment to partial sustainment prior to becoming extinct in the third year of implementation.

Diane presented a unique perspective from her experience that was not reported by other participants. She went beyond data collected in the previous phase to comment on the need for collaboration between staff members to ensure that students are not teased for their participation in projects.

We had kids coming back to class a little late, so they were being bullied because they had been to the "Sped" class, so we had to collaboratively address that. But that was a real concern that collaboration addressed. It had to be dealt with by a group of people. The collaboration wasn't negative but we had to use it to address it (Diane).

Responsive to Change

Wilma's report was representative of the sentiment of all participants in that they suggested that flexibility from stakeholders assisted in the success of the projects. All participants indicated that flexibility allowed for changes to be made to address the changing needs of stakeholders and school setting. During the interview Wilma linked her principal's leadership style to the ability of the stakeholders to be responsive to change. "I think it certainly was successful because we could change things if we needed to. We weren't 'locked in', so it gave us traction. He (the principal) let it flow to cater for the needs of the setting" (Wilma).

Sam reported that it was essential to be aware of the readiness level of stakeholders. She commented on other factors in her account of the responsiveness of research. Sam again identified the importance of having a complete program and giving staff time to become familiar with it. Meg, who supported the need to be responsive to changing setting and stakeholder needs in her survey and initial interview comments, later reported that she showed the staff what they were going to do and they didn't question anything.

I gave them readings. It was the PD. You know, you find the level the people are at, you have to find their level so it is meaningful. They were happy to do it, cause they had the whole program; they didn't have to do anything. They had time to just get used to it because they had it. They had time to get comfortable with it (Sam).

Meg also described that she did not expect her staff members to prepare the research-based project. The difference between Meg and Sam's report was that Sam commented on the time the staff had to become familiar with the project. Meg described that she was predominantly the person who shared the knowledge of the project and staff followed her lead.

It was mainly me. I did give them the PowerPoint based on what I had done with the lecturers on the course beforehand to show them that this is what they were

going to do. They didn't really question anything, but I suppose that's because they hadn't done it before. They had knowledge of it. It was as far as me telling them as much as I could during the power point, but because they hadn't experienced it before they had to go on what I was telling them (Meg).

I reported that when direct instruction was given without the opportunity for collaborative decision-making and shared ownership, change became difficult. The same staff had experienced a new principal and responded well to this change. Yet the third principal's more authoritarian approach was not reported to have a positive impact on the project. Both cases that reported a negative response to change gradually became extinct.

The Implementation and Sustainment of Research-Based Projects Is an Ongoing Process

Participants identified that the implementation and sustainment of research-based projects is an ongoing process not a singular event. Reports made by participants commented on the impact of multiple factors when responding to interview questions. Diane, Mary and Sam's reports reflected the sentiment of all participants when they explained that projects that assist many people in a school community have an increased capacity to continue to be sustained if they continue to prove to be beneficial.

I guess this one gets the results as it helps the whole school it is not KLA specific (Diane).

It is purposeful and non judgmental and benefits us all (Mary).

The fact that it was working made people want to pick it up and run with it. It just keeps building (Sam).

Summary of the Factors Identified by Participants During the Explanation Phase

All factors included in the survey, which were identified in the RTP literature were reported as having a positive impact on the implementation and sustainment of research projects, other than the need for acknowledgement and reward. Meg was the only participant who mentioned reward when she stated that she did not receive any financial gains for coming into school to prepare resources on her day off.

Diane presented unique observations from her high school experiences. She reported on the need for projects to be given status so that they are included on school timetables due to the increased number of stakeholders involved in secondary settings. She also expressed that a collaborative approach to bullying is essential for students not to be targeted when participating in projects.

Reports about the need for personal traits such as passion, endurance and determination were presented by five of the six participants. These factors went beyond the need for enthusiasm of stakeholders as identified in the RTP literature. Comments

about the positive impact of visual organizers such as graphs and the strengths experienced through the support of parents were also presented in the interview responses of three of the six participants.

Sam was the only participant who expressed the importance of identifying the readiness of staff to implement the projects at her school. She reported that the key was moving staff forward from there. Yet all participants commented on the teacher education experience and their growth during and after that experience. All participants presented the strengths of the step-by-step structure of the course as a key beneficial feature during both the surveys and the interviews. The structure of the course was reported as having a positive impact on building our capacity. In five of the six cases, participants linked the new knowledge gained through their participation in the TE course to their increased status from staff and parents and the increased confidence in their depth of knowledge and ability. The importance of the depth of knowledge could not be separated from teacher education experience and comments on competing demands were not independent from reports on leadership by any of the six participants.

6.1.4 Review of the Significant RTP Knowledge Collected Through the Explanation and Exploration Phases

The responses collected through this second phase (explanation) of this work built on the knowledge collected through the first phase (exploration). The comparison of participants' responses across the first two phases were used to explain how factors identified in RTP literature and those gained from direct RTP cases impacted upon the implementation, sustainment, scaling or extinction of evidence based projects.

The responses from Part 1 of the survey and the first round of interviews conducted in the exploration phase, gave priority to broad statements of accessibility, feasibility and practicality of projects in addressing genuine needs of the students within their schools. Broad reports about the intensity and depth of the teacher education experience and the strong impact of leadership support on the sustainment of projects were also presented. The first part of the explanation phase presented the results that were collected from Part 2 of the survey and the second round of interviews through the use of the 16 RTP statements as a framework. Analysis of this information revealed the **importance of the relationship among RTP factors**. This positive interconnection between factors increased with the scaling of four projects over the course of this study. The negative impact of the reduction or removal of key RTP factors was evident in the events leading to the extinction of two project.

The relationship between collaboration taught in the TE program and the need for a complete framework that weaves practical experiences into a theoretical framework were important factors, which linked to the benefits of emergent feedback. All participants suggested that feedback was most effective when it was

woven into the project. This use of feedback was modelled in the Master's course and replicated during the implementation stages of all six projects. It continued through all phases of the four scaled projects. Collaboration was promoted through the use of a common language that was understood by all. This increased comprehension of key project features, enhancing accessibility, trustworthiness and in turn the usability of projects. The use of clear communication, feedback and shared goals was also shown to promote trustworthiness among the academics and practitioners and the projects. By working together to develop a shared understanding of the links between theory (academic researcher perspective) and practice (classroom teacher perspective), all participants believed they were prepared to effectively use the framework modelled in their TE experience to share skills and knowledge essential to the implementation and sustain their project with school based stakeholders.

The acknowledgement, recognition and reward of stakeholder efforts and for identified student gains were shown to enhance the use of the project. Leadership support also promoted the interconnection of required project enhancing factors. This was evident in the successful implementation of all projects. The support of the leadership team contributed to the allocation of the required time, resources and increased project status within schools. The removal of the leadership supports in my project highlighted how this directly contributed to the breakdown in the interconnection of required factors such as time, shared responsibility and communication opportunities. This lack of support directly contributed to a reduction in project status by increasing demands placed on staff members.

These results combine to confirm that implementing and sustaining a research-based project is a process and not a single event or series of linked events as successful implementation is dependent on the interconnection of a combination of RTP factors. This interaction of factors is critical to enhancing the sustainment of research-based projects in practical applications and without this interconnection the success of research-based project sustainment in schools would be compromised.

6.1.5 RTP Factors and Connections

Key RTP factors and their relationships have been identified and explained through the practical experiences of six different RTP cases that were investigated using the replication logic identified in Chap. 3. A summary of the key factors and their connections that were presented as important to the sustainment of the research-based projects follow.

6.1.6 Six Key RTP Themes Consistently Prioritised and Linked by Experienced Teachers: Digging Deeper into Comprehending What Makes Research Stick in Practice

The fertile responses presented using the 16 succinct RTP statements as a framework are further distilled and expressed across six themes that were consistently prioritised and linked by teacher participants. These six themes were identified as being important to the sustainment of research-based projects and include; teacher education, collaboration, leadership, time, feedback and project scalability with a complete approach. These themes are in no way independent or exclusive of each other but have been selected to provide an account of the **strong relationships** that were identified through the data collected during phases one and two.

6.1.6.1 Theme 1 – Master’s Course/Teacher Education

The depth of knowledge gained through the Master’s course was identified as a support by each teacher participant and was referred to in the data collected across each of the sub themes. This teacher education experience was prioritised as a key RTP factor as it was identified as being critical to the understanding of skills, knowledge and attitudes essential to collaboration and to ensuring research could respond to the needs of individual settings. There was also consistency across all participants in their responses about the effectiveness of the course structure as it presented essential theoretical knowledge through consistent practical components. These practical components included advanced organisers which presented expectations graphically at the start of every unit and the consistency in delivery and structure across subjects. The assessment tasks were effective in building the Masters students’ capacity, as they were relevant to school settings. All participants stated that the course was demanding and equally beneficial in increasing the depth of research-based knowledge and the ability to be instrumental in implementing it. The merging of theoretical and practical components was described as being highly effective in delivering new knowledge and preparing students in their ability to transfer the newly gained skills and knowledge with other school based educators.

All participants were part of the same Master’s course and presented differences in comments about the type of support they gained from their teacher education experience. These various types of support provided by the teacher education experience ranged from Meg’s responses that highlighted the benefits of practical tools such as the Gantt chart to Sam’s explanation of the advantages in ensuring consistency in comprehension of a common educational language and the way that language was used to communicate knowledge across all stakeholders. Sam also identified the benefits of having a colleague whom she completed the course with at her setting.

6.1.6.2 Theme 2 – Collaboration

Collaboration was presented as being essential to the implementation, sustainment and scaling of Wilma's, Sam's, Mary's and Diane's projects. The reduction in collaboration levels contributed to the extinction of Meg's and my projects through the reduction in opportunities for communication, shared responsibility and ownership. All participants linked their depth of knowledge of the elements required to promote collaboration within their schools to their Master's course experience. Mary described that the course structure encouraged a "lived experience" in that there was an expectation that an action that incorporated a demonstration of new knowledge would follow. Diane stated that through modelling the course structure she was able to share knowledge about collaboration in a similar way with school staff members through staff meetings, professional readings and staff development days. Sam and Wilma stated that through their project scaling experiences they learned that when courses are complete and comprehensive with practical experiences woven into their framework, they have the capacity to reinforce essential learning. They explained that through collaborative efforts teachers can be prepared to implement projects as a whole rather than in parts.

Both Meg and I also attributed our depth of collaboration knowledge to our TE experience. Through our project implementation experience we recognised the need for united efforts that were understood and shared by all. Meg identified that the decision to rapidly scale her project was not made collaboratively. She also expressed that the project workload was not shared and that no additional time was allocated to enhance communication opportunities as the project was scaled. Meg indicated that these factors contributed to the extinction of her project. My project was scaled successfully with strong support from all stakeholders until the new principal and deputy arrived. They were not committed to the project and this reduced the school's united effort and support for the project, which ultimately contributed to the extinction of the project.

The need for united efforts that were based on cooperation, respect and engagement in pursuit of genuine questions, problems and solutions were identified by all participants. Mary and Diane identified that shared responsibility; ownership and enthusiasm grew as the project addressed genuine concerns across her school. Sam explained that collaborative cultures may not always be harmonious but a shared language and common goals are essential. Mary explained that with opportunities to promote substantive and frequent interactions her project was able to address a genuine need and it became part of the school policy. This shared responsibility and ownership led to the increased status of the project, which led to increased stability and comfort. Both Meg and I identified the need for alignment of the project and school's goals with shared ownership and unity. It became clear that the status of our projects significantly reduced as the unity in support and allocation of time for our projects reduced.

6.1.6.3 Theme 3 – Leadership

All participants identified leadership as a key support and all experienced a change in leadership personnel. Five out of six participants described that the new principals supported their project. Wilma described the increased traction gained when her personal determination was combined with the support of her principal, while I described the impact of the removal of leadership support on the trajectory of my project. Differences in leadership style had a positive and negative impact at individual settings. At five out of six settings the new principals sought to gain a deeper understanding of the project. They supported the projects once they identified the gains resulting from their implementation. At my setting the new leadership regime did not have an interest in learning about the project. They did not share the same common understandings of educational terms as existing staff members. They also introduced additional responsibilities without the allocation of additional time and support. These factors had a negative impact on the status of my project, while the change in leadership did not have an adverse impact at the other settings.

6.1.6.4 Theme 4 – Time

All participants suggested that time is a critical factor required to support the practical implementation and sustainment of research-based projects in school settings. Time was linked to the scalability of projects in different ways. These examples ranged from Wilma's description of the modification of her timetable to allow her time to work with others, while Meg described that she did not have the time required to make resources or provide instruction as her project was expanded. Mary described how that status of her project increased to a whole school priority and this brought an increase in time allocated to her project. As a result it was prioritized above other competing demands. Diane, Meg and Mary commented on the importance of timely evaluation and feedback.

6.1.6.5 Theme 5 – Feedback

All participants commented on the value of feedback being woven into the design of the project. Effective feedback was identified as being specific, relevant, timely and beneficial in guiding future directions or activities. Sam clearly described that when feedback is detailed, relevant and timely it can guide knowledge of ways to enhance the next phase of the project and cater for stakeholder needs as they occur. Sam also described how she gained knowledge of the readiness levels, intentions and aspirations of staff members through surveys. She stated that this knowledge is critical to directly supporting and addressing stakeholder needs. I described the

positive impact of staff enthusiasm for the project, while Diane presented her personal determination for the project to succeed as a driving force. Wilma commented on the need for resilience and commitment to the success of her project and Meg described the negative impact of the lack of collegial support as her project was expanded.

The need for consistency in feedback and opportunities for feedback from multiple perspectives was presented by all participants as a way of ensuring that projects remain responsive to student needs. Feedback that is woven into the project design and is emergent (Berends et al. 2001) rather than being given at the conclusion of the project was said to be more effective and enhance flexibility so that the projects can continue to address the changing needs of staff and students.

6.1.6.6 Theme 6 – Project Scalability with a Complete Approach

All participants shared the view that the research project needed to have the potential to be scaled so that it can have a whole school influence. Mary and I explained that the scalability of a project can be enhanced through the use and accessibility of technology. Mary identified the importance of scaling projects within time frames that are effective and responsive to the needs of the stakeholders.

Wilma indicated that through a complete approach and engagement of strong project features, the likelihood of scalability and project success are enhanced. Sam supported this and added that through the weaving of accessibility, feasibility and the practicality of her project a reinforcing effect occurred which enhanced the scalability of her project as practical and theoretical components were merged.

In summary the six identified RTP themes and the connections described within and across them were used to inform the construction of the guiding focus group questions. These themes were derived from the ratings participants allocated to the RTP factors within the three areas of collaboration, support and responsiveness of research and the more detailed response presented using the 16 RTP statements as a framework. The following Chapter describes the expansion phase, the third and final phase of this research. The focus group conducted in the final phase of data collection sought to gain a complete and comprehensive account across the total participant cohort of how research-based projects were and could be successfully implemented and sustained across diverse practical applications.

Key Points

- This chapter highlights the phased evolution of RTP knowledge that has been informed by researcher and practitioner perspectives (see Fig. 6.1). Direct teacher quotes and examples have been used extensively to provide an insight into what matters most in implementing and sustaining the use of research to address the needs of students in authentic classrooms.

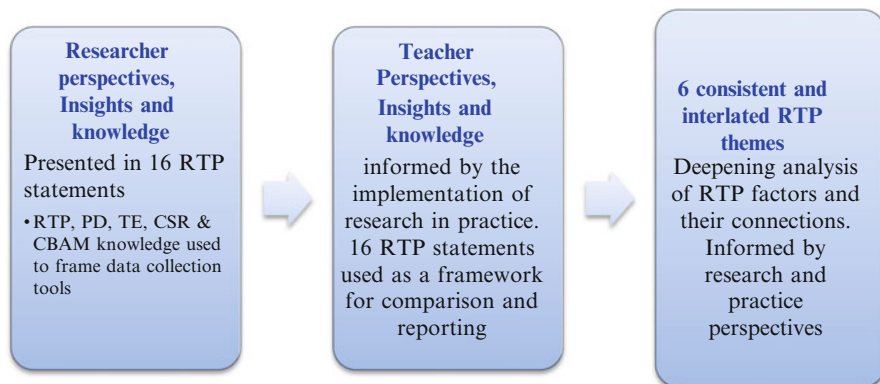


Fig. 6.1 Evolution of RTP factor knowledge

- Six identified RTP themes and the connections between them were presented by teachers as being critical to the implementation and sustainment of research based projects in the classroom. These themes evolved from participant ratings participants allocated to the RTP factors within the areas of collaboration, support and responsiveness of research and their more detailed responses obtained through the 16 RTP statements as a framework.
- These six themes include; teacher education, collaboration, leadership, time, feedback and project scalability with a complete approach. They are not independent or exclusive of each other but have demonstrated an account of the strong relationships that were identified through the data collected during phases one and two.

This Explanation chapter provides an example of the outcomes of Phase two of the methodology in action for potential future use by teachers or researchers across different applications.

References

- Berends, M., Bodilly, S. J., Nataraj Kirby, S., & McKelvey, C. (2001). *Implementation and performance in New American Schools: Three years into scale-up*. Santa Monica: Rand.
- Goldstein, D. (2014). *The teacher wars: A history of America's most embattled profession*. New York: Doubleday.

Chapter 7

The Expansion Phase

Confirmation and Expansion of the Consistencies, Differences and Interrelationships Between the Factors Essential to Enhancing the Sustained Use of Evidence Based Practices

Respectful and perpetuating relationships between Research AND Practice based knowledge can be the Ying and Yang of enhancing student outcomes in diverse educational contexts

Abstract This chapter identifies the consistencies and differences outlined by experienced teachers post the implementation, sustainment, expansion or extinction of six different evidence based projects in school applications. Through a focus group discussion teacher participants explored the priorities and interactions among Research to Practice factors together. They elaborated upon and confirmed the RTP factors that impacted on the changing status of the research based projects in their schools and the relationships between them that developed as a result of their implementation experiences.

The knowledge and school based examples collected during the final data collection phase, confirmed existing responses and expanded upon the complexities in the interrelations among the RTP factors that enabled and enhanced the scaling of four cases and contributed to the extinction of two others. These significant interrelationships are presented through four themes in this chapter including: collaboration and feedback, leadership, scalability of projects and teacher education. These themes were derived from the consistencies identified across the teacher participant responses through all three phases of this study, which included a review of the RTP literature. This collective knowledge builds a deeper understanding of the factors and the relationships between them that contributes to research being sustained or not sustained in practice. In essence, this chapter builds on previous RTP knowledge as teacher participants described and compared ways in which *similar RTP factors worked together to strengthen the status of projects whilst those same RTP factors worked against each other to reduce the status of others*.

In brief, this final expansion phase used the accumulated knowledge gained through this phased study to respond to the central research question: What are the factors *and the relationships between them* that influenced the translation of RTP in inclusive education settings?

This chapter aims to:

- Present teacher participants' accounts of the RTP factors and their interconnections as presented in a whole group discussion.
- to generate a deeper understanding of those RTP factors and the connections among them that influenced the implementation, sustainment or extinction of evidence based projects in school based applications.
- report on the consistencies and differences identified by teachers through an in-depth collective discussion of what, how and why RTP factors exerted an influence on the trajectories of their individual projects.
- provide a review of the data collected through the exploration, explanation and expansion phase of this study.
- presentation of figures and statements that identify the significant relationships that contributed to the scalability or extinction of the individual cases.

The expansion phase went beyond previous phases to generate a deeper understanding of the RTP factors and the connections among them that influenced the implementation and subsequent status of six unique RTP cases. This third and final phase built on the previous exploration and explanation phases by extending the scope of the study to include a focus group session. The focus group presented an opportunity for an in-depth collective discussion by teacher participants of how and why RTP factors exerted an influence on the trajectories of evidence based projects implemented in authentic classrooms. This phase also sought to identify any additional RTP factors reported by teachers that were not sourced through the literature or participant responses during previous phases. Participant responses were used to respond to the following research question:

What factors, other than those identified in the exploration and expansion phases, contribute to the status of RBP in inclusive education settings?

What were the differences and consistencies in the relationships between the RTP factors that contributed to the status of the projects that were identified by the research participants?

The focus group questions were derived from the previous knowledge collected from surveys, Master's projects, and interviews conducted throughout the exploration and explanation phases. The key priorities extrapolated from these sources were used to develop the focus group questions. These questions reflected the key priorities identified during previous phases. The questions sought a deeper understanding of how the RTP factors and their relationships contributed to the success or failure of the sustained implementation of evidence based practices which had been proven to enhance student outcomes. These questions were used to guide the data collected during this expansion phase.

The chapter is presented in three sections. The first section presents a summary of the organizational details of the focus group. This is followed by teacher participants' accounts of consistencies in the RTP factors and their interconnections. The second section presents the inconsistencies identified in the discussion when compared with the results of other phases. The status of the individual cases is also presented with participant responses throughout this expansion phase. The third

section provides a review of the data collected through the exploration, explanation and expansion phase of this study. The section concludes with the presentation of figures and statements that identify the significant relationships that contributed to the scalability or extinction of the individual RTP cases.

7.1 Overview of the Structure of the Focus Group

All members of the group arrived at the same location in which the open-ended and semi-structured interviews were held and were on time. They gathered for afternoon tea and were briefed on the procedure of the session. They all knew each other given that they had completed their Master's course together and as a result were comfortable with one another and appeared eager to share accounts of their experiences. The structure of the focus group provided an open forum for discussion for the teacher participants and continued for 75 min. I facilitated the session to maintain its flow and was available to address any group dynamic issues as they arose. Given my role of participant researcher, I chose to assume the role of facilitator as my predominant mode of interaction with the group (see Chap. 3). On occasion where I had a contribution that had not been made by another member or where there was a need for an alternative or corroborating perspective, I provided input to the focus group conversation. The focus group was videotaped to display verbal and non-verbal elements such as gestures, facial expressions, articulated exchanges and pauses. Initially participants were a little anxious about the video recorder. After five minutes they relaxed and seemed unaware of the video recording that was taking place. Videotaping permitted easy review of the group interactions and body language.

7.2 Consistency in Connections of Key RTP Factors Identified Through the Group Discussion

The focus group questions that related to each of these areas are presented within them. These questions follow a statement which links the question to the RTP knowledge collected through the previous phases. The focus group questions sought additional clarity and details on the area introduced. The questions are followed by a description of the discussion that unfolded within and across the unique school settings. The discussion was not limited to the guiding questions. They were created to encourage an in-depth expansive discussion to further extrapolate the RTP factors and the interrelationships that consistently emerged from the data collected in previous phases within and across the cases. The questions are grouped together and presented at the start of each of the areas. The group discussion is presented within the areas rather than as a response to individual questions to avoid repetition and to

identify the interrelationships prioritised by participants. Through the focus group, teacher participant discussions were detailed in relation to the practical implementation, expansion or extinction of their projects. The teachers offered details accounts of their RTP cases and willingly offered examples to add clarity to their experiences. They also answered questions that were planned to guide the focus group discussion in advance of them being asked.

The following section presents an overview of the consistency in factors identified, and the connections among them in the areas of implementation, sustainment, scalability or extinction of individual RTP cases. This section is organized around the group responses to the focus group questions. It is structured according to the four key areas that represented the priorities extrapolated from the group discussion. These areas include: collaboration and feedback, scalability and time, leadership and teacher education.

7.3 Shared Responsibility, Collaboration and Feedback

7.3.1 Focus Group Questions

Collaboration has also been cited as a critical factor in implementing and sustaining Research-based Projects (RBP) in schools. A comment was made about collaboration not always being harmonious and there is sometimes a need to push boundaries in some communities of practice to get things done. What can be done in schools to foster respectful disagreement without animosity?

All six case studies within this project identified the importance of shared responsibility and ownership in implementing and sustaining RBP in schools. How can shared responsibility and ownership be achieved and scaled up?

Voluntary teacher or stakeholder participation in the project and student gain has been suggested as key RTP components through literature based assertions as well as data collected from this research. How do you ensure maximum student opportunity if teacher participation is voluntary and not all teachers want to participate? (For example a student would likely benefit from the RBP but the class teacher doesn't want to participate).

7.3.2 Responses

The focus group began with a discussion on collaboration. The teacher participants described collaboration, as a situation where stakeholders all worked together to meet a common goal, through shared ownership, responsibility and feedback. Participants described a subject in the course about collaboration with a compulsory assessment that involved developing a PD module on collaboration for use in

schools. This assessment and unit were described as highly beneficial and practical. Collaborative skills were presented as being critical to implementing and sustaining research-based projects in schools through all three phases of this study. During this phase participants provided additional details that described and linked the many factors reported to enhance collaboration within and across their schools. There was a consensus that the knowledge and skills gained from the Master's course experience greatly assisted with the implementation and sustainment of the projects. Participants agreed with Mary's description that the course structure encouraged a "lived experience." Meg added that throughout the course there was an expectation that an action, which incorporated a demonstration of new knowledge, would be followed by the expectation that we would demonstrate how we would share this new knowledge with our school-based colleagues. Diane interjected that through modelling the course structure in her school she was able to share knowledge about collaboration in a similar way with staff members. She elaborated by describing that this was done through staff meetings, professional readings and staff development days. Sam and Wilma reported that as their project became scaled, they realised that when courses are complete and comprehensive with practical experiences woven into their framework, they have the capacity to reinforce essential learning in applied settings. Sam and Wilma linked their experiences of the scalability of their projects to collaboration when they explained that collaborative efforts are essential for teachers to be able to implement projects as a whole rather than in parts.

During the discussion teachers continued to link multiple factors identified through previous phases when recounting the importance of collaboration on the status of their projects. A strong consensus emerged around the effect of well-designed teacher education opportunities and the way they can contribute to teachers' feeling sufficiently prepared to teach a diverse range of students. Participants acknowledged this creates an avenue for research-based practices to be effectively used in classrooms.

The discussion continued with participants reinforcing the importance of linking factors to encourage other stakeholders to be involved in the projects. Mary, whose project was scaled within and beyond her setting, provided a summary of the relationship between key elements identified by participants as critical if projects are to survive in school-based applications:

To get people involved, they needed to be taught the processes (the procedures, expectations and responsibilities required to implement and sustain the projects). They needed to get up to speed with it. Up skilling and empowering the whole staff so the whole school was aware of the project and its details. It needs to be appealing in that it needs to be easy, doable quick to administer and realistic in time expectations. The website was also useful (Mary).

Both Meg and I confirmed that our depth of collaboration knowledge resulted from our TE experience even though our projects became extinct. We described that as the strength and status of our projects began to reduce, the importance of previously identified collaborative cultures became increasingly evident. Throughout our project implementation experience we recognised and reported a need for united

efforts that were understood and shared by all. Meg elaborated on the decision to rapidly scale her project:

The decision to scale the project was not made collaboratively. The project workload was not shared and no additional time was allocated for any additional communication opportunities. All these things worked together to undermine the project (Meg).

I then explained how my project was scaled successfully with strong support from all stakeholders until the second new principal and deputy arrived.

The new leaders were not committed to the project and this reduced the schools united effort and support. There was a breakdown in time, support, unity between staff and additional commitments. These things all worked together and ultimately resulted in the breakdown and termination of the previously strong project (Chris).

Collaboration was again linked to the Master's course as participants expressed that the course increased their depth of knowledge of the complexities required to enhance collaborative cultures. All participants throughout the discussion frequently echoed the importance of collaboration. There was an agreement that collaboration did not always have to be harmonious. The conversation continued with suggestions that at times boundaries need to be pushed in order to get things done. Participants recommended ways that school staff could foster respectful disagreeing without animosity:

The improving of student outcomes needs to remain a central common goal. Taking the personal nature out of it, taking the focus away from the teacher or teaching and having it on improving student outcomes is the key (Sam).

Yet you need to be aware that there will always be some people who may not be happy due to other underlying issues or other variables but the common goal without the personal agenda is how you can get past that (Diane).

The collaboration, feeling part of it is also important but keeping the children as the essential focus. So adjustments may need to be made with the students as the pivotal point (Mary).

General consensus from the four participants whose projects were successfully scaled was that collaboration was critical to enhance the strength of their individual projects. Meg and I reported that the reduction in collaboration within our settings led to the extinction of our projects due to the decreased opportunities for communication, shared responsibility and ownership.

Reports made by the focus group went beyond data collected through the previous phases to link comments about collaboration to the need for ongoing feedback. All participants supported those perspectives presented in the previous phases that the value of feedback was increased when it was flexible and woven into the design of the project. The collection of suggestions combined to describe effective feedback as being specific, relevant, timely and beneficial in guiding future directions or activities.

When feedback is detailed, relevant and timely it could guide decisions about how to make the project work well and address the needs of staff and students. I also needed to know about the readiness levels, intentions and aspirations of staff members and I used surveys to collect this information. This knowledge was critical to

enhancing the collaborative culture within my school as it gave us the information required to directly support and address the needs of staff (Sam).

During the discussion, I described the benefits of the positive impact of staff enthusiasm for my project, while Diane presented her personal determination for the project to succeed as a driving force. Wilma commented on the need for resilience and commitment to the success of her project and Meg described the negative impact of the lack of collegial support, as her project was due to be expanded. All participants agreed that although the examples of shared responsibility and feedback did differ, if they are continuous and responsive to stakeholder needs, they can contribute to enhancing collaborative environments.

Mary and Wilma described the collaborative strategies they employed to address the challenge of encouraging less enthusiastic staff members to become involved. These included collaborative weekly meetings to offer feedback and discuss the pros and cons that they had experienced during the project implementation and sustainment phases.

Writing these concerns and strengths in a journal and knowing that they had to share these entries at weekly meetings actually encouraged staff to keep records. Because staff were expected to participate in weekly meetings and everyone knew this they were usually prepared. If people didn't contribute everyone at the meeting would know about it (Wilma).

All participants supported Wilma's claims "that once student gains were evident, interest and growth in project ownership was a natural progression" (Wilma). As the discussion continued the group suggested ways to enhance interest in the project if student growth was not evident early in the project implementation. All participants recognized that the project must fit within the whole school plan and PD agenda and that all staff members need to understand how it fits with opportunities for feedback and collaboration throughout. It was suggested that this would allow staff members to be aware of when student gains are expected. Teacher education and professional development were linked to the increasing of knowledge and understanding required to comprehend key components of the project. Feedback and collaboration within teacher education courses was cited as being essential to support students and assist participants in catering for the needs of stakeholders within their school settings. Meg and I both agreed and supported these claims even though our projects became extinct. I described the contrasting impact of my research-based project first being part of the whole school plan and then its removal removed from the whole school plan. All participants reinforced the importance of the interrelationship between feedback, collaboration and whole school support as they expressed that they comprehended the results of their withdrawal in my setting.

Meg went on to share her account of the lack of collegial support at her setting and how that negatively impacted on the status of her project. This prompted a discussion in which all participants agreed on the importance of shared responsibility and ownership with inbuilt opportunities for feedback and communication when implementing and sustaining their individual projects. During the focus group session practical information on how to promote shared ownership and collaboration was identified. All participants linked the accessibility of project information and

opportunities for feedback with increased knowledge of the project details to the successful status of their projects. The up skilling of staff and informing them of all project details was presented as being essential to making them feel valued, empowered and responsible for the success of the project. There was a consensus in the input of focus group members that project ownership was enhanced by the project's usability, appeal and feedback on student gains. All participants agreed that projects that were easy, realistic, quick to administer, trustworthy and implemented within manageable time expectations were more likely to elicit positive feedback and be sustained.

The participants indicated a need for consistency in feedback and opportunities for feedback from multiple perspectives for collaboration to exist. These factors were viewed as a way of ensuring that projects remained responsive to student needs. The group agreed that as the projects unfolded it became evident that feedback was more effective when it was woven into the design of the project rather than given at the end. Sam confirmed the sentiment of all participants when she stated that "feedback opportunities must be flexible so that the projects can continue to be effective in addressing the changing needs of staff and students" (Sam).

All participants agreed that collaboration, which included communication and feedback from many stakeholders (from all levels) needed to be ongoing and substantive so that it can be practical, relevant and timely. The relationship between the RTP factors was further described as being more successful when feedback was consistent and addressed teacher enthusiasm, personal qualities and the changing needs of individual stakeholder's and their setting.

Participants shared their interpretation of the critical links between factors required to promote collaborative cultures within and across their settings. All participants described the need for united efforts based on cooperation, respect and engagement in pursuit of genuine questions. The group viewed these qualities as essential to the success of research-based projects. Mary and Diane indicated that shared responsibility, ownership and enthusiasm grew as the project addressed genuine concerns across their schools. Sam explained that "collaborative cultures may not always be harmonious but a shared language and common goals are essential to achieving successful outcomes" (Sam).

Mary explained that with opportunities to promote substantive and frequent interactions her project was able to address a genuine need and it became part of the school policy. Participants reported that this shared responsibility and ownership led to the increased status of the project, which led to increased stability and comfort amongst stakeholders. Both Meg and I identified the need for alignment of the project and school's goals with shared ownership and unity. It became clear that the status of our projects significantly reduced as the unity in support and allocation of time for our projects reduced.

7.4 Leadership

7.4.1 Focus Group Questions

In all six cases, school based leadership by principals and deputy principals was identified as a ‘make or break’ factor for RBP in schools. In the previous phases it was indicated that effective leaders should be flexible, approachable, be able to provide consistency in support, be a good communicator, see things from multiple view points, be a team player and be trusting. How can these attributes be fostered, enhanced or mandated in current or future leaders?

An interesting comment was made in one case study about how effective leadership is vital in driving the project without playing a main role. What could this look like? How can effective leadership drive a project without playing a main role?

7.4.2 Responses

All participants elaborated on the importance of leadership identified through previous phases. There was a strong consensus that leadership was a key contributor to the sustainment of projects as it was directly linked to multiple factors that could enhance support or conversely increase competing demands. The only time that the leadership factor was referred to independently of other RTP factors was when participants commented on the movement of their principals to or from another setting. All participants described that they had experienced a change in leadership personnel at some point in the implementation and sustainment of their projects. Five out of six participants described that the principals who were newly appointed to their schools throughout the sustainment or scaling stages of the projects all supported the research-based projects.

As the discussion progressed around comments about leadership, it increasingly identified connections to other RTP factors. Wilma described the increased traction gained when her personal determination was combined with the support of her principal, while I described the impact of the removal of leadership support on the trajectory of my project. Differences in leadership style had a positive and negative impact at individual settings. At five out of six settings, new principals sought to gain a deeper understanding of the project. Those principals supported the projects once they identified the gains resulting from their implementation and this had a positive impact on the status of four out of the six cases. I shared an account of what occurred at my setting when the new leadership regime did not have an interest in learning about the project. I described that they did not share the same common understandings of educational terms as existing staff members. They also placed additional responsibilities on staff without the allocation of additional time and support. The combination of these factors had a negative impact on the status of my project; while the change in leadership did not have an adverse impact most of the

other settings. Wilma, Mary, Sam and Diane indicated that the support of their new leaders had the opposite impact on the status of their projects. They described that in each of their settings, their new leaders sought to comprehend the details of the projects. Once the new leaders identified that the strengths of the projects outweighed the challenges, they maintained or increased the allocation of time and resources to the projects. Wilma, Mary, Sam and Diane were united in their claims that the strengthening of the relationship among key factors including leadership support, time, resources and project status significantly assisted in the scaling of their projects.

Meg reported that her project had the strong support of her school leaders yet their decision to promote the project and scale it without consulting with all stakeholders contributed to its extinction. Meg's experience highlighted the importance of the relationship between key factors rather than single factors as she had the strong support of her principal, yet her project still became extinct because of the lack of collaboration, shared ownership and responsibility for project goals and resources by other stakeholders.

Wilma, Mary, Sam, Diane who implemented projects that were successfully scaled beyond their school, stated that their projects had a strong focus within their schools because they were given status by the leadership team. They all expressed that leadership support significantly increased the status of their projects and the likelihood that those projects scaled as they were afforded greater traction in the school. I explained that at the outset there was support for my project, which was subsequently reversed with a change of leadership. As the new leadership reduced its commitment to and focus on my project, the project's status reduced and it eventually became extinct.

Mary reported that the support of her principal also improved the status of the learning support teacher, which had a positive impact on her project's sustainment and scalability. She continued by describing the changes within the school system. Mary explained that with the change in the directors of the education system, the commitment to special education from the system's leaders had significantly reduced. All the other five participants supported her comments and shared their concerns about the distinctive difference between the directions of the previous and current leaders of the system on the continuing successful sustainment of their RTP projects: "In our system the status of a special education teacher has been reducing with the changing leadership model within head office over the past 5 years" (Mary).

Sam and Wilma agreed with Mary's comments about the status of educators having an impact on the success of the project. I added that the principal as well as the systems' leaders interpretation of the status of the Special Education Teacher can also have a positive or negative impact as their attitudes can have an impact on the whole staff. Consensus was again reached when participants connected the knowledge gained from the Master's course with their status within the school and the system. They explained that the course empowered them and gave them increased status within the system. All participants then expressed that with a change of model and a different vision from the new system's leadership, their increased status significantly reduced. It remained undisputed that the support for

research-based projects needs to be provided at a system level to ensure collaboration opportunities that guide and support school principals and staff are prioritised.

All six participants described the importance of a distributive leadership style (sharing of leadership) and linked it to trustworthiness and collaboration. Sam suggested that to disperse control requires a lot of faith and trust on the part of the principal. She added that it is essential as they can't run everything on their own and they can't be expected to know everything. Meg added, "they (principals) are accountable for so much that they need the assistance of others to reach goals and benefit students, teachers and parents" (Meg). Sam added her thought on distributive leadership. She stated, "they don't really need a depth of knowledge of the change process, it is a skill base that is just in them, and it is just their effective style (Sam).

7.5 Project Scalability with a Complete Approach and Time

7.5.1 Focus Group Question

Familiarity, confidence and comfort in the project were also stated as important factors in the sustainment of the projects. Many of the interview responses indicate that along with project familiarity and confidence, the project must address a real need with a complete approach and the allocation of sufficient time. The key is accurately determining needs, finding where stakeholders are at, and moving forward. How is this done with efficiency and accuracy? How is real need established?

7.5.2 Responses

There was a consensus in the group about the need for scalability if the projects were to exert whole school influence. Mary and I explained that the scalability of our projects was enhanced through the use and accessibility of technology. Mary went further and related the importance of scaling projects within reasonable time frames. She described that it was easier to scale her project when she was able to use the student scores generated from the project to inform her instruction and respond to their identified needs within a reasonable time frame.

Wilma specified that her project was implemented as a complete project, rather than just implementing parts of the project. Wilma reported that the implementation of all the parts of her project increased its scalability and success. Sam supported this and added that as her project was easily accessible, feasible and practical, it had a reinforcing effect, which enhanced its scalability. Diane and Wilma went on to link systemic support and parental support to the successful scaling of their projects:

Additional support needs to come from above as often principals are told to do it. It has to come from a higher purpose (Diane).

Yes, and the increasing of parent awareness can also have an impact. As if parents know what is better for their children, they will encourage principals to go that way and continue with the projects because they are helping their children. Getting the parents on board is the secret of success. Give parents the information they need to prove it works and why (Wilma).

These reports about scalability sparked a discussion where all participants acknowledged that people who really believe in or are passionate about something have the capacity to drive and strengthen it. All participants concurred that it is hard to disseminate passion to the whole school unless a project or initiative is perceived to be valuable, trustworthy, well planned and accessible. The discussion then led to claims about the importance of agreed practice. Mary expressed that if a project became part of the school policy, staff should be expected to support and facilitate its implementation and sustainment: “if a project is part of the school policy there is an expectation that all staff would support and adopt school policy” (Mary).

Throughout the conversation, comments about the sharing of passion were consistently linked to collaboration and agreed practice. As the discussion deepened these areas were linked to the project’s potential for scalability and successful student outcomes. Wilma shared her experience about a colleague who taught year 6 and other staff members who became involved and disseminated the experience to others. Wilma stated that as more stakeholders experienced success they became increasingly passionate about supporting the school’s project. She described that this in-turn encouraged them to become proactive in the dissemination of this new passion to others. Mary went further and linked passion to leadership; “People in high places that are passionate seem to have a strong positive impact and it is easier for the passion to be infectious if the right people are on board” (Mary).

During an extended discussion on the successful scalability of Wilma’s, Mary’s, Sam’s and Diane’s projects and the extinction of mine and Meg’s project, leadership was once again identified by all participants as having a direct impact on other factors which ultimately led to the overall status of the projects. The group confirmed that if people in leadership positions supported their projects, they would be viewed in an influential way making them easier to scale. The discussion then progressed to highlight the importance of parental support. All participants agreed that having the parents on board could contribute to the project success and scalability. Parental support was also connected to collaboration, support, scalability and leadership factors. It was briefly introduced during the explanation phase but additional clarity and specific examples of the positive impact of parental support were provided during this expansion phase. Wilma described that in her case parents were informed of the project goals and this encouraged the staff to provide feedback to parents. As the parents became aware of the project’s benefits, they shared this knowledge with other parents, who in-turn wanted their children to benefit also. Wilma’s comment synthesised the sentiment of the group as she stated that “the positive feedback from parents about the success of the projects positively encouraged the school leaders to continue to support efforts to sustain our project and time and resources continued” (Wilma).

As the conversation continued it was acknowledged that group members had become a strong impetus for change as a result of their implementation and scaling experiences. All participants were unanimous that credit should be allocated to the students for their engagement in and support of the project as this contributed to the increased status of individual projects. Participants strongly agreed that when the students identified and recognized the gains they were making, they also supported the project and became drivers for this positive change. During the discussion it became evident that all members agreed with Diane when she asserted “if our students know things are working or want things to work, they keep us motivated” (Diane). These comments were linked to the project’s potential to be scaled through statements including; “If we forget they (our students) are soon there to remind us, as they hold us accountable to providing them with the service they expect or require” (Wilma). The group also shared comments about the benefits of students’ self-monitoring and its positive impact on their progress. “When we work collaboratively with students they are able to be strong drivers in looking for what works so our projects must be able to be used so that they all benefit” (Mary). Diane was the only participant to support NAPLAN assessments to identify student ability and this was the only area of disagreement through the discussion.

Sam went on to share an interesting insight about agreed practice and how it was critical to the scaling of her project. She commented on new staff and how teaching is the only profession, which claims autonomy. During the exchange participants responded to Sam with interest in the relationship she described and nodded throughout her explanation:

It is about agreed practice. If it is part of the school policy there is an expectation that when you joined the staff, you comply and adopt school policy and do what you can to sustain and promote the school initiatives. You really have to do it that way. The voluntary bit is in the discussion. That way you voice your opinion, share your thoughts but essentially agreed practice encourages participation in school-based decisions. Interestingly teaching is the only profession who claim autonomy (Sam).

There was a consensus amongst participants irrespective of whether projects were scaled or extinct, that including ways to address scalability resulted in whole school influence. It was also identified that projects are more likely to be scaled if systems and schools have clear goals promoting the use of research-based practices. It was confirmed by the participants whose projects were scaled that when these goals are shared and research projects respond to genuine questions, problems and solutions the RTP gap was reduced. All six participants noted that the success of their projects was influenced by the extent to which educators could be involved with the research projects. It was described that by involving multiple stakeholders, strong partnerships that share responsibility and ownership can be developed. It was further explained that these relationships could build a sense of credibility among stakeholders, ultimately supporting the RTP process.

The group reported that time is also a critical factor required for the practical and successful application and sustainment of research-based projects in school settings. Time factors were described as having a significant impact on the scaled or extinct cases in different ways. Examples of the importance of time ranged from

Wilma's description of the modification of her timetable to allow her time to work with others, to Meg's description that she did not have the time required to make resources or provide instruction as her project was expanded. Mary reinforced her description that when the status of her project increased to a whole school priority, an increase in time allocated to her project. This assisted in the increased status of her project, as she was better able to address competing demands. All participants whose projects became scaled supported Mary's comments as they established that the status of their projects increased with the allocation of additional time. Meg and I supported these claims, yet this relationship between time, support and competing demands was not identified in our projects as they reduced their status within our schools and became extinct.

Diane, Meg and Mary commented on the importance of timely evaluation and feedback on reinforcing key project features and eliciting changes as required. Diane's report synthesizes the sentiment of all participants when she identified the relationship among multiple factors as they occurred at her setting:

It has to fit with the plans and needs of the school. It must fit into the whole school reform and PD agenda at exactly the right time and you must show how it fits in. This is where the whole lit review and depth of knowledge comes in. You need that background knowledge and understanding to show and share how it fits in. It must cater for an established need and be timely so that it is actually relevant and not too early or too late (Diane).

Meg responded by stating that "time was key in the implementation stages" of her project. She explained how time for making resources, the sharing of knowledge, feedback and recording was vital. Other participants interjected with multiple comments expressing that time was a priority and was linked to many RTP factors throughout the implementation, sustainment and scaling phases of their projects. They explained that time was required to learn skills and rehearse them. It was essential to cater for the changing needs of stakeholders and it was required to continue as the projects evolved. Participants whose projects were both scaled and extinct identified the importance of time on the successful interrelationships among the RTP factors.

7.6 Master's Course/Teacher Education

7.6.1 Focus Group Question

A number of you suggested that the university course framework was very effective in providing a structure or scaffold to promote a depth of knowledge. Specifically how did the university course framework make a difference to your project? How can we develop this depth of knowledge learned as a result of our coursework in other practitioners within schools?

7.6.2 Responses

Each participant identified the depth of knowledge gained through the Master's course as an essential support to the implementation and scaling of research-based projects. It was referred to in the data collected across each of the areas identified. The group conversation acknowledged that the teacher education experience was a key element that underpinned the relationships across multiple factors in the six direct RTP cases. It was identified as being crucial to the understanding of skills, knowledge and attitudes essential for collaboration and to ensure research is comprehended and used effectively. There was consistency in comments confirming the effectiveness of the course structure. This structure was described as being so effective as it presented essential theoretical knowledge through a series of regular practical components. All six participants agreed that their teacher education experience delivered a depth of content knowledge along with an awareness of how to share that knowledge with staff as required. The following dialogue presents a series of quotes that reflected the sentiment of the group about the knowledge gained through the course:

Gave us confidence and increased depth of knowledge (Meg).

We could share that depth of knowledge we gained by providing them (staff) with the key information about the practical efforts required (Wilma).

Not everyone wants the depth (of knowledge) we got. It needs to be...this is what it looks like in our classrooms; here is the scaffold, so this is how you do it. They are so busy with the day-to-day things so they only want the practical elements and an explanation of why we should use them (projects) for our kids. We need to be able to say this is what it looks like for you. We have the depth to spell it out for them. All they want to know is what it looks like. They don't need to know everything but a resource person does as they can guide them in their practical knowledge as needs and questions arise (Mary).

Participants continued to describe practical components, which made the course effective in the delivery of the "lived experience, which increased our knowledge and skills and ultimately our status within our schools" (Diane). These components included the consistency in delivery and structure across subjects including advanced organisers, which presented expectations graphically at the start of every unit. All participants agreed that assessment tasks were effective in building the students' capacity, as they were relevant to school settings. All participants eagerly supported Sam's report that the course was very demanding yet it was equally beneficial in increasing the depth of research-based knowledge and the ability to be instrumental in implementing it. The merging of theoretical and practical components was again unanimously agreed upon as being critical to the imparting of new knowledge and preparing students in their ability to transfer the newly gained skills and knowledge with other school based educators.

Teacher education was linked to collaboration, support, accessibility, usability, trustworthiness and the responsiveness of research throughout the discussion. Reports that the Master's course experience increased participant depth of knowl-

edge and capacity by giving the confidence to share theoretical understandings through practical experiences to support students continued to resonate. The following comments echoed the sentiment shared by all participants about how increased stakeholder knowledge assisted in the increased status of the projects. Mary, whose project was scaled within and beyond her setting, reinforced earlier comments made about the changing status of the special needs teacher within the school system. All participants again supported her comments and then shared their concerns about the distinctive difference between the directions of the previous and current leaders of the system. Mary's account expressed the sentiment of the group discussion:

Because we were responsible for implementing the research-based projects our increased status seemed to also have an impact on the success of the project. It is not only the systems notion of Spec Ed Teacher status which can have a positive or negative impact it is also that of the principal themselves as their attitudes can have an impact on the whole staff. The knowledge gained from the Master's course empowered us and gave us some status within the system, but now with a change of model at a systems level and the different vision, that status has significantly reduced. I don't know where we stand, it has been changing so much over the last 5 years, it even changes within schools. There is confusion now. Sometimes I even feel we are an aid. The confusion is also reflected in how other staff members also looked at us (Mary).

The focus group conversation about the change in the school systems elicited a range of mixed emotions from participants. They unanimously expressed the benefits that their teacher education experience had on their capacity to promote the use of the selected research-based project, yet were disappointed that "the new leaders did not have the same commitment to inclusive education as the previous leaders" (Wilma). They all agreed that the intentional linking of their subjects within the course assisted in reinforcing key ideas and this assisted in aligning their theoretical and practical knowledge, however felt that their "wealth of knowledge could be shared with other school staff to help the kids as had been planned under the old model" (Diane). Another key feature identified by all six participants was that courses are more beneficial when they directly respond to teacher needs through a clear and consistent approach. Mary expressed that the course was very beneficial and gave us the confidence to share our new knowledge but the dismantling of the Special Education arm of the system made us powerless.

Differences in comments about the type of support gained from the teacher education experience were identified. These differences built on factors introduced in the explanation stage and included Meg's identification of the benefits of practical tools such as the Gantt chart (a bar graph illustration of the schedule of the project which identifies a breakdown in structure), to Sam's explanation of the advantages in ensuring consistency in comprehension of a common educational language and the way that language was used to communicate knowledge across all stakeholders. Sam also identified the benefits of having a colleague with whom she completed the course at her setting.

Comments on the Master's emerged in other areas discussed during the focus group. The preparation experienced by the participants was reported as being highly

effective in building their capacity to deliver and implement new content within their school settings and beyond. The experiences gained through the course were reported to have changed the educational expectations of each participant. This was reflected in their individual settings as all six participants expressed that they successfully implemented a research-based project in their settings. Four of which continued to be scaled and two became extinct, yet there were no differences identified during the focus group discussion about the benefits, structure or challenges of the course.

7.7 Consistencies Identified by Teacher Participants

The focus group format and questions made it possible for teachers to identify connections among the RTP factors and present practical examples of these relationships as a result of the implementation, sustainment or extinction of their specific RTP cases. Initial factors identified during the exploration phase were categorised into three sub themes being support, collaboration and responsiveness of research. These broad categories were organized using the 16 succinct RTP factors introduced in the exploration phase. During the subsequent explanation and expansion phases participants built on their initial accounts and went further to present the relationships identified among factors.

The focus group discussion gave participants an opportunity to elaborate on their RTP experiences and compare them across cases. As a result additional details emerged as participants discussed the development of interrelationships of factors during the different stages of their projects. These RTP factors and their connections that have exerted an influence on the status of each case have been consistently referred to during the group discussion. These connections that emerged through this final expansion phase represented the areas at the core of effective RTP relationship and were described repeatedly across the six unique cases. Once again these areas are not mutually exclusive but are representative of the priorities that were presented by participants as key themes or contributors to the status of their projects. These themes include; the content of the projects, and the capacity of those projects to address the needs of stakeholders, and the capacity and preparation of the people involved in the projects. Underpinning these themes are three simple constructs: people, projects and preparation (these themes are expanded upon after the integrity of the RTP relationships are described).

It was very interesting to note that **Participants had difficulty separating or isolating factors and all participants described factors according to their connections.** Reports of these connections became stronger as the discussion unfolded. Participants presented more detailed accounts of their experiences as they progressed through the three phases of this study and knowledge of the significance of the interrelationships between RTP factors continued to strengthen.

7.8 Inconsistencies Identified by Teacher Participants

All participants agreed on all RTP factors and their connections except for the comments made about the National Assessment Program – Literacy and Numeracy (NAPLAN) assessments. These assessments commenced in Australian schools in 2008. Every year, all students in Years 3, 5, 7 and 9 are assessed on the same days using national tests in Reading, Writing, Language Conventions (Spelling, Grammar and Punctuation) and Numeracy. Diane’s comments during the discussion identified a relationship among support, leadership, collaboration and the NAPLAN results of students at her school. She stated:

That in today’s society established need can also be displayed through NAPLAN results. These results display an expectation of where our students need to be. They are another measure of accountability. There is a clear mandate in schools stating that we must improve the *blue line* (*average results for the school*) (Diane).

Diane reported that at her school staff spent many meetings in collaborative discussion about the blue line and ways to support students in improving their results. She identified that her school leaders wanted to show points of growth to address the declining numbers in many schools across the system. Diane went on to state that her leadership team wanted to show that they are a good school and the NAPLAN statistics are very clear and were used in the school to increase accountability and status.

These comments promoted a debate about teaching to the test and the usability and trustworthiness of NAPLAN data. All participants indicated that data generated from research-based projects were more effective than NAPLAN results and could be used to show they were doing something to improve results and that they also offered solutions to address the identified needs. Diane concluded by stating that principals and leaders want NAPLAN results. She went further to state that our projects have identified ways to improve the results of students but Diane explained that she believed the NAPLAN results are still beneficial to compare student data across schools. The discussion about the NAPLAN assessment was the only time that inconsistency in viewpoints across participants was identified.

7.9 Summary of the Significant RTP Knowledge Collected During the Expansion Phase

During the focus group all teacher participants provided a more detailed account of the previously identified RTP factors and their relationships in the context of the individual projects. Reports by teachers of the interrelationships among the RTP factors became more descriptive as the focus group discussion evolved. A summary of those key areas that exerted an influence on the status of each case was presented within four areas, along with an account of the ways in which they were connected.

Participant teachers reported the connections between the RTP themes and how they had a positive or negative impact on the status of the projects. All participants agreed on the importance of the identified themes and their connections. Only the NAPLAN discussion, as previously described generated any diversity of response across the focus group members.

The responses from the two cases that became extinct described many positive factors, yet the breakdown in the connections between RTP factors contributed to different negative experiences, leading to gradual extinction in both cases. In both cases that became extinct, the participants explained that the decisions of the school leaders contributed to a breakdown in the positive relationship between RTP factors. Meg described that the decision by the executive team to scale the project was not made collaboratively with the staff. This contributed to lack of ownership and support from the stakeholders who were to implement it. I described my new principal and deputy did not order the extinction of the project yet their lack of verbal support, interest and resources contributed to a reduced status, lack of time and the increase of competing demands on stakeholders.

7.10 Summary of Part Two

7.10.1 Review of the RTP Knowledge Collected Through the Three Phases of this Study

This study collected data through three distinct phases. To summarize the first phase, the exploration phase, explored prior literature based RTP assertions and presented initial RTP factors identified by each of the participants as a result of their experience. The second phase, the explanation phase, introduced the RTP literature to the participants and used it as a framework to further explain the influence of those factors and others in direct RTP cases. Participants found it difficult to respond to isolated factors in the explanation phase and connections between them were identified. During the third and final phase, the expansion phase, participants expanded on the complexity of the critical connections between RTP factors and themes that both enabled and interfered with the successful translation of the research projects in their settings. Participant responses became more detailed when they compared experiences across their cases in the final phase.

The relationships between the projects, the people involved, and their preparation continued to resonate as being vital when participants reported on the key RTP factors that built their capacity within their school-based contexts. Participants all reported that for their projects to maintain strength and effectiveness, their project content needed to address the changing needs of the staff and students.

To enhance the comprehension of the complex collective knowledge gained through the three phases of this study a visual representation of RTP priorities are offered in Table 7.1. Table 7.1 presents an overview of the RTP factors and their

Table 7.1 Key emphatic themes presented in each case during the three phases of this study

Case	Exploration phase	Explanation phase	Expansion phase
Chris	United decision-making.	Stakeholder’s appreciation and enthusiasm.	TE is critical to promoting skills, knowledge and attitudes and should be clear and consistent to be readily transferred. Essential theoretical knowledge transferred through practical components.
(Extinct)	Student gains.	Useful standardised data that elicited positive responses.	Increased knowledge leads to increased confidence contributing to the transfer of relevant information to others.
	Consistent and standardised project Relevant and consistent feedback.	Flexibility in design.	Master’s course was very demanding, equally beneficial.
	New leadership failure.	Withdrawal of leadership support.	Reduced leadership support had a negative impact on many RTP factors and contributes to a cycle of extinction.
	Effective TE course structure.	Reduced communication.	New leaders require common understanding and commitment to projects for them to be sustained.
		United efforts understood by all.	Collegial support, awareness of project goals and communication are essential to projects scalability.
Importance of RTP relationships became more important as they were withdrawn.			
Scalability potential.			
Continuing not isolated event.			
Mary	Website support.	Time frames that are responsive to changing needs.	Status of the special needs teacher is impacted by the status and support of school and education system leaders.
(Scaled beyond setting)	Resource preparations.	Project status within the school.	Knowledge gained from the TE experience empowered our capacity.
	Responsive to student needs.	Embedded in school culture through whole school policy.	Adjustments need to be made with students’ progress as the pivotal point.

(continued)

Table 7.1 (continued)

Case	Exploration phase	Explanation phase	Expansion phase
	School ownership.	Comprehensive approach to address genuine concerns.	To be appealing projects need to be complete, easy, doable and quick to administer.
	User friendly, easy to up skill staff.	Technology support.	
	Practicality and depth of TE course.	Clear consistent PD.	
		Timely detailed feedback.	
		Substantive and frequent interactions to promote positive partnerships.	Less enthusiastic staff can be encouraged through shared accountability and responsibility.
		Shared involvement and ownership increases project status.	Projects that address scalability are more likely to succeed.
Lived TE experience.	Effective adoption of features.		
Effective adoption of features.			
Diane	Leadership support.	Scalability potential of project.	Intentional linking of course subjects and clear and consistent frameworks reinforced key ideas.
	Personal motivation.	Validated.	TE was highly effective in building capacity of participants and their staff.
	Practicality of TE experience.	United efforts incorporating feedback and collegiality.	Feedback is most effective when it is flexible and is woven into the design of the project.
		Part of school culture and calendar.	Students self-monitoring can contribute to the success of projects.
		Replication of TE structures to share new knowledge.	
Wilma	Staff and leadership support and involvement.	Part of whole school assessment plan.	School system leaders can significantly impact inclusive education initiatives.
(Scaled beyond setting)	Responded to identified school need.	Leadership by example.	When projects are complete and comprehensive with practical experiences they have the capacity to reinforce essential learning.
	Practicality and depth of TE course.	Simplicity of implementation and monitoring.	Collaboration is essential for teachers to implement projects as a whole rather than in parts.
	Parent support.	Valued, useful and standardised data.	Well designed TE creates an avenue to promote RBP in classrooms.

(continued)

Table 7.1 (continued)

Case	Exploration phase	Explanation phase	Expansion phase
	Easily comprehended project materials.	Importance of the little things.	Increased traction is possible when personal and leadership determination are combined.
	Retraining for new staff	Graphic organisers in coursework.	Parental support can encourage accountability and scalability of the projects.
		Complete approach to course design and projects.	
		Resilience and commitment of stakeholders.	
		Time for ongoing PD of teachers.	
		Depth of theoretical and practical knowledge.	
Sam	Projects catered for staff and student needs.	Part of school policy.	Sharing of new knowledge improved project and participants status.
(Scaled beyond setting)	Staff enthusiasm and support for project.	Student monitoring.	Consistency in common educational language enhanced communication and was transferred to explicit language being used at schools.
	Strong TE course structure built capacity.	Project growth links to student gains and staff commitment.	Collaboration is not always harmonious. Improving student outcomes needs to remain the central goal.
	Model school PD on course.	Building capacity and rapport through shared comprehension of educational terms.	Cooperation, respect and engagement in pursuit of genuine questions and solutions led to project scalability and increased comfort and stability.
	Flexibility in design of projects.	Being part of a cohort.	Principals should be trusting to share decision making and responsibility.
	Realistic demands on stakeholders.	TE course built practical knowledge and experience into a theoretical framework.	Projects that are realistic and accessible can have a reinforcing effect if theoretical and practical elements are merged.
		All embodied course structure with reinforcing effect.	
		Complete and comprehensive.	
		Staff readiness levels.	

(continued)

Table 7.1 (continued)

Case	Exploration phase	Explanation phase	Expansion phase
Meg	Time for monitoring and feedback.	Collegial support.	Collaboration enhances the strength and scalability of projects.
(Extinct)	Whole team approach.	Sufficient preparation and input into decisions.	Rapid scaling of a project without shared ownership has a negative impact on other RTP factors that led to gradual extinction.
		Align project and school goals with shared ownership and unity.	Unity and time are critical to enhance decisions made by leaders.
	Depth of TE experience.	Project expansion requires increased supports.	Allocation of time to prepare resources and for PD is critical and must be ongoing.
		Changing setting and stakeholder needs.	
		Flexibility.	
Complexity in scaling.			

relationships that were prioritized by participants through their individual responses during the exploration and explanation phases. The responses from participants are not reiterated across phases. During the explanation phase, participants found it increasingly difficult to isolate RTP factors and additional information identifying relationships among RTP factors became increasingly evident. Participants responses collected through the discussion during the expansion phase went further to confirm the complexity of the relationships among the RTP factors identified by the participants within and across cases as they provided a more detailed account of their experience. All participants, including those of extinct and scaled cases, supported the importance of these relationships. **The significance of the interrelationships among the RTP factors identified through the extinct cases became more evident as they were withdrawn.** The key resounding interrelationships presented within the expansion phase were strongly supported by all participants. There was consensus in the sentiment of the group that the sustainability and scaling of research-based projects was intuitively enhanced when relationships promoting student gains, teacher capacity, whole school ownership, and complete and comprehensive project designs were promoted. Participants found it difficult to accurately describe their unique RTP accounts when RTP factors were presented in lists. Table 7.1 identifies the increasing detail presented by participants about the importance of the interrelationships among the RTP factors as they progressed through the three phases of this study.

This collective knowledge was examined further and the key relationships that contributed most significantly to the scaling or extinction of individual RTP cases were summarised and represented visually in the following figures. *Very interestingly, the two cases that became extinct exhibited many positive factors, yet the breakdown in the connection of these RTP factors yielded negative results.* The use of the arrows working against each other and the misalignment of the cogs in Figs. 7.1 and 7.2 represent the factors not supporting each other and gradually contributing to greater RTP concerns. In the two cases that became extinct the factors did work against each other progressively over a 1-year period prior to the projects becoming extinct. The four cases that were scaled within and beyond school settings provided examples of how the cyclic interconnection among RTP factors contributed to enhancing the use of research-based projects to address identified student needs. The use of the arrows and the well-aligned cogs in Figs. 7.3, 7.4, 7.5, and 7.6 represent the factors that worked together to strengthen the sustainment and status of each case.

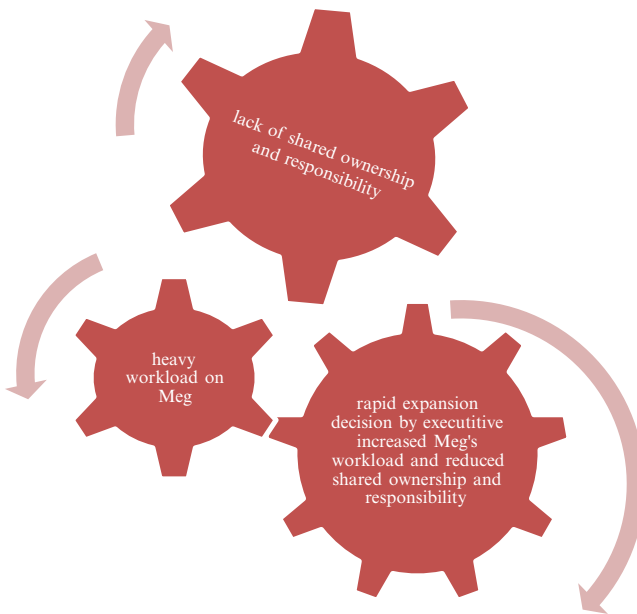


Fig. 7.1 Meg

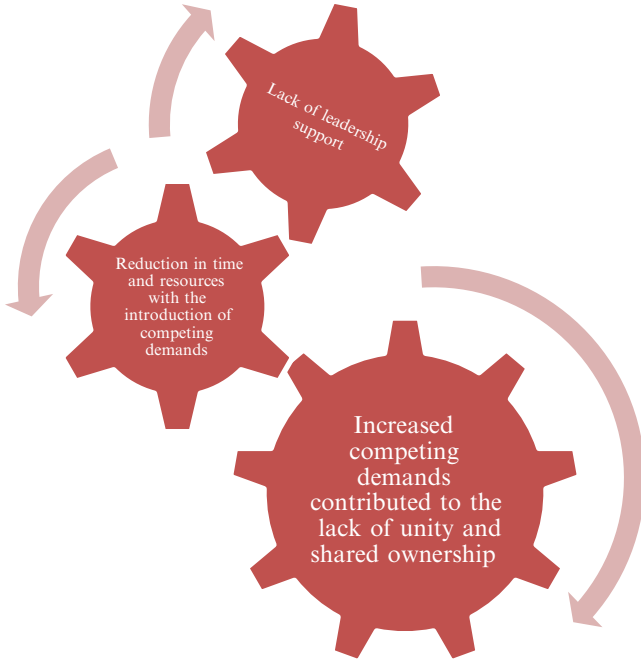


Fig. 7.2 Chris

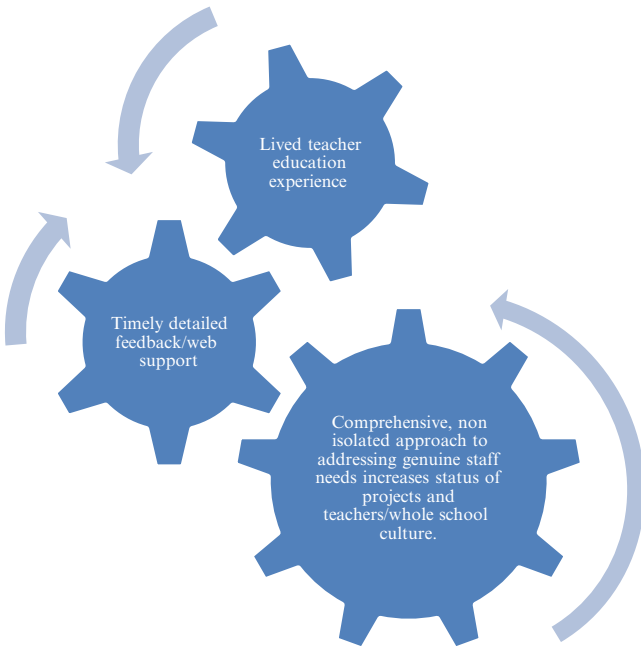


Fig. 7.3 Mary

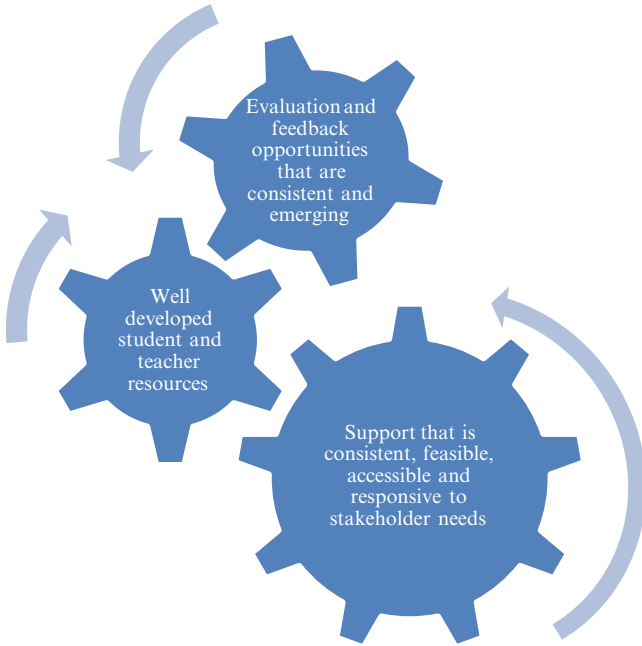


Fig. 7.4 Wilma

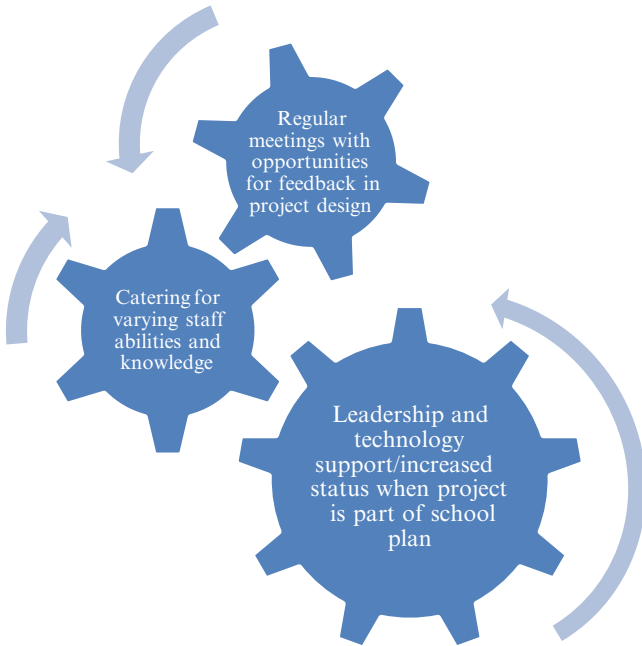


Fig. 7.5 Diane

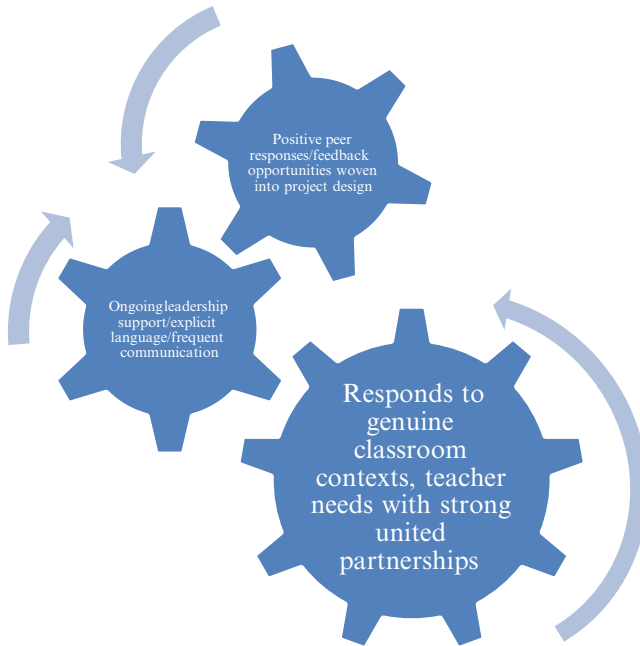


Fig. 7.6 Sam

7.10.2 *Relationship of Factors that Contributed to the Extinction of Two Individual RTP Cases*

7.10.2.1 **Relationship of Factors that Contributed to the Expansion of Four Individual RTP Cases**

The purpose of including the relationships diagrams was to highlight the importance of maintaining the integrity of the connections among the RTP factors (presented through the exploration, explanation and expansion phases) in sustaining research-based projects in schools. Each figure was created to express the factors and the relationships among them that were described as most prominent by each of the participant teachers as a result of their experience.

Significant Point of RTP Knowledge

On commencing this research I hypothesised that a list of factors critical to sustaining the use of evidence based practices in authentic classrooms would be developed. However this was not the case but rather:

As a result of this research it became increasingly evident that the same factors can be both enablers and inhibitors in RTP initiatives depending on the type of relationships that develop. The interrelationships among these RTP factors were identified by all participants as having a greater impact on reducing the RTP gap than a number of isolated factors.

Part Two Key Points

- The data presented in Part Two identified the sources of similarity and difference in six different research to practice cases.
- The developmental and phased approach (exploration, explanation and expansion phases) and cross-case comparison were designed to add dependability through replication and triangulation.
- The literature was used to frame the instruments and processes within the study to collect the RTP feedback from participants. Through the exploration, explanation and expansion phases a chain of evidence was developed. The examination of data and methods continued through each phase and the RTP factors, identified through five bodies of literature, were used as a framework for this study.
- During the initial (exploration) phase of the study, 75 RTP factors that were identified in the literature were summarised into 16 succinct RTP statements. A comparison of participant responses prior to exposure to the literature, revealed a strong relationship between these responses and the factors identified in the RTP literature.
- In the second (explanation) phase of the study participants identified relationships between the RTP factors. They were analysed and presented in terms of the following six key areas: Teacher Education, collaboration, leadership, time, feedback, scalability with a complete approach.
- During the focus group, conducted in the final phase (expansion) of the study, the total participant cohort further described, prioritised and confirmed the importance of RTP relationships over the need for a list of isolated RTP factors. As a result of the focus group discussion, the six key areas identified in the previous phase were refined to create four RTP priorities; collaboration and feedback, leadership, Teacher Education, project comprehensiveness and scalability, and time.
- The support of the total participant cohort for the importance of the relationships among the same RTP factors (which were aligned differently to suit the needs of the individual settings) was used to propose 13 recommendations of ways to reduce the RTP gap. These recommendations are presented in the following section and are described in three core areas; people and their capacity, the projects and their content and preparation and its context.

Part III

Moving Forward in Reducing the Research to Practice Gap

Building a Solution

Teaching and research fundamentally depend on the involvement of one another for maximum benefit. The merger of the active ingredients identified through research and practice move us beyond simply imparting knowledge, to inspiring growth and transformation through the enhancement of deep multifaceted understanding.

*Reducing the research to practice gap to maximize student gain is possible when **the complementary interconnecting whole is greater than independent parts.***

Part II of this book exhibited how the RTP literature based knowledge, identified through the analysis of four decades of RTP literature as described in Part I, was used as a framework to directly examine the active ingredients critical to research becoming practice or research becoming extinct in real classroom settings. A range of teacher voices and experiences were presented through the investigation of six different Research to Practice case studies across the three phases of this research. Part three expands on this collective research and practice knowledge to highlight the importance of the critical connection amongst RTP factors that both enable and interfere with the successful translation of research to practice in inclusive education school settings. It presents an overview of the knowledge that was identified, explained and confirmed through the progression of this study.

This final section reinforces the importance of methodological knowledge and decisions if teachers are to be informed consumers of research, and the importance of practice based knowledge if researchers are to be informed and responsive to the needs of teachers and authentic classroom realities. It acknowledges and respects that for decades **researchers** have attempted to provide teachers with theories and programs that have the capacity to positively impact students' academic performance and **teachers** have continued to work consistently at meeting the diverse needs of students in their classrooms. The shared goal of enhancing positive student engagement and outcomes through the use of research-based practices has stimulated significant efforts to unite research and practice domains. Part III builds on this collective work to provide a way of moving beyond making information available

for interpretation, to proposing a continuously evolving and collaborative pathway forward in sustaining the use of evidence based projects in practice.

Part III is divided into three chapters that present an actionable progression informed by the work of both researchers and experienced teachers, as both perspectives need to be realized for research to be disseminated in practice and for practice to inform and be informed by research. It is organized into the following chapters that:

- Highlight the importance of the connections within and among the people, their preparation and evidence based projects to create effective and engaging environments in which stakeholders are able to use research-based projects to address diverse student needs (Chap. 8)
- Present an innovative and interactive Research to Practice Model that directly responds to the well articulated need to reduce the research to practice gap. This RTP Model builds on previously accumulated knowledge and experience to provide an accessible and practical approach to responding to the complexity of research to practice relationships (Chap. 9)
- Identify the limitations of this research work, present future RTP research recommendations and implications for building sustainable school cultures that could benefit the ongoing and mutually beneficial implementation of evidence based practices. Through the potential increased use of research-based projects that enhance inclusive practice, it is envisaged that a larger proportion of students with diverse learning needs, may experience successful outcomes in inclusive education settings (Chap. 10).

Vignette

On commencing this research I hypothesised that the analysis of the data would result in a list of factors, conditions and attributes that would assist in the sustained implementation of research based programs in schools. These research based programs would have the capacity to enhance the outcomes of a diverse range of students, when implemented with integrity. Surprisingly, a major finding of this investigation was that *all the teacher participants were not able to isolate ANY specific research to practice factors when explaining their first hand classroom RTP experiences.*

Interestingly as responses became more detailed through the three phase of the research design methodology (whereby the information collected from previous phases was used to create more explicit questions in the subsequent phase), participants indicated that they needed to describe the connections among the factors to fully articulate how their projects functioned with their

(continued)

students and settings. Explicit examples of the multiple and complex connections among the RTP factors that developed and changed over a 3-year period demonstrated a need for a comprehensive framework that weaves practical experiences and theory into a single approach.

Although the findings of this investigation did not confirm my original expectations and provide a list of factors that would assist in reducing the research to practice gap, it did strengthen my understanding of the multiple and complex dimensions of inclusive education research and practice cultures. Rather than a list of RTP factors an interlinked RTP cyclic framework has resulted from this research work to portray the non linear but interactive, converging and compensatory pathway to research influencing practice and visa versa.

Chapter 8

Teacher Education: Engaging Connections Between People, Projects and Preparation

The goal of educational research is functional by nature

Abstract This chapter highlights the unwavering support for the importance of the connections and relationships among consistent RTP factors if research is to be functional and responsive to the needs of students in authentic classrooms. Research to practice factors were aligned and experienced differently in every unique school setting, yet they were all consistently identified and are foundational to formation of 13 recommendations on ways to reduce the RTP gap in education. These recommendations are featured in this chapter through three core areas: people and their capacity, the projects and their content and preparation and its context. All teacher participants consistently linked these core areas as they reflected deeply on how research was implemented, sustained or failed in their classrooms.

8.1 Critical Connections Among RTP Factors

The goal of this book is to strengthen links between research and practice in order to promote the sustained use of evidence based practices to effectively respond to the diverse needs of students. Despite the well articulated support (from practitioner and researcher stakeholders, school system and education policy) for the implementation of research based programs in practice, there still remains a significant gap between what has been proven to work and the extent to which it has been applied and sustained in practice. Part three strives to pave a way forward in reducing the complex RTP concern by building on the importance of the critical connections amongst the factors that both enabled and interfered with the successful translation of RTP in inclusive education settings (outlined in Part 2). Interestingly as the knowledge gathered through this phased research was analysed **it became increasingly evident that the same factors can be both enablers and inhibitors in RTP initiatives depending on the type of relationships that develop between them.** These *interrelationships* among RTP factors have been proven to have a greater impact on reducing the RTP gap than a list of isolated factors.

A number of claims on ways to promote the application of research-based projects in school and classroom contexts have been reported through this research. They capture the connections that emerged from this research work and comprise of three areas including; (i) people and their capacity, (ii) the context that unites schools and universities in preparing teachers and (iii) the projects and their content. Links across all areas were identified as being essential if the RTP gap is to be reduced. This knowledge was based on the recognition that change (being the reduction in the RTP gap) is about the interaction among the many individual factors that are required to create reinforcing and responsive RTP cycles. The following section presents 13 suggestions that were asserted by the total teacher participant cohort as ways to enhance the implementation and sustainment of research based projects in classrooms and schools. They are presented in the three core areas, however are not strictly bounded by them. The three core areas include; preparation, people and their capacity, and the research-based projects.

8.2 Core Areas to Enhancing the Sustained Implementation of Research Based Practices in Classrooms and Schools

8.2.1 Engaging Schools and Universities in Effectively Preparing Teachers

Teacher education was presented as a critical link in the implementation and sustainment of research-based projects in school applications. It represented an avenue that combined researcher and educator knowledge and experience to enhance the use of research-based projects to promote inclusive environments that cater for the needs of a diverse spectrum of students. The use of research could increase in traction and sustainability if it embedded in and flows from classroom teacher's expertise and experience, and is responsiveness to incidental and day-to-day classroom realities. As such teacher education is presented a way forward in reducing the research to practice binary. Positive partnerships among people at universities and schools contributed to enhancing shared goals and directions. Each teacher worked with university staff toward the shared goal of implementing a research-based project in their individual schools to address student needs. The analyses of the results of all cases identified four suggestions generated within the non-exclusive area of teacher preparation:

1. The teacher education opportunity was presented as an avenue, that provided multiple levels of engagement, ongoing communication and shared goals among the researchers and educators. As a result of the shared teacher education experience, the benefits of explicit links between research and practice were identified and attributed to the successful implementation of research-based projects. Participants all reported that the teacher education experience (as described in Part One) successfully assisted in aligning previously regarded differing norms,

expectations and roles of researchers and practitioners. This was accomplished by merging the course content into a theoretical framework where university staff worked with school based staff to collaboratively decide on which project would best address the needs of their diverse settings. However it should be noted that the positive impact of a teacher education experience on strengthening knowledge and skill bases is often not apparent until after a comprehensive teacher education course is completed.

2. The structure of the teacher education course that comprised of comprehensive features, not only instilled new knowledge and skills into course participants but also provided confidence and ability to replicate this merger of relevant content and process in real classroom settings. The projects (set as the culmination of the Masters course) were described as a support, given that the consistency across the design of all subjects within the course, reduced confusion and provided educators with visible structures and resources that could be utilized to transfer theoretical understandings to enhance practice. Theoretical understandings were most effectively shared through practical experiences that were responsive to the variance in interest and abilities of stakeholders at school settings.
3. Teacher education efforts that responded to participant readiness levels and school contexts encouraged teacher enthusiasm and increased effort. The relevance and popularity of teacher education initiatives increased when they were perceived as having the potential to address the needs of school-based staff and their students. Mutual respect between researchers and educators was established as teachers' demonstrated increased determination to use research-based projects that were responsive to their needs and promoted student gains. This mutual respect has the capacity to promote the use and sustainment of research projects in schools as the diverse skills and knowledge from both research (university) and practical (schools) agendas are essential to relationships united in catering for the needs of a diverse range of students.
4. Teacher education initiatives that ensured consistent comprehension of terms (pattern or explicit language) and provided scaffolds with clear expectations promoted the use of research in classrooms. A one-size fit all approach to teacher education has not been as effective. Providing teachers with a clear and consistent framework and encouraging them to use this as a scaffold to implement a research-based project in their own setting was highly beneficial in enhancing their use of such projects. This personalized approach provided an experience with linked practice and research to create an avenue for ongoing, open communication within relevant and responsive timeframes that encouraged its replication in school settings.

8.2.2 Engaging People and Enabling Them to Work to Their Capacity

As identified in the review of the literature, the transference of knowledge and skills essential to the effective sustainment of research-based programs, has been, and continues to be a significant challenge. Through the progression of this study and the analysis of responses from teacher participants, it became increasingly evident that the binary, which separates researchers and educators, is not productive. The information gathered confirmed that if the efforts of researchers and educators were joined through a collaborative partnership, they are more likely to have an impact on reducing the well-documented RTP gap. In this present study, that partnership assumed the form of a graduate teacher preparation program which served as a vehicle for enhancing a collaborative approach among teachers and researchers in the promotion of research-based project skills and knowledge. The analyses of results expanded on previous recommendations from commentary and intervention research studies to highlight the importance of the relationships among RTP factors. Five suggestions have been generated to enhance the capacity of stakeholders to effectively implement and sustain research-based projects:

1. Addressing students' needs must be a central and mutual goal of a cooperative team of researchers and educators. The characteristics, skills and experiences of individuals implementing and sustaining projects can have an effect on the status of evidence-based projects within school environments. Personal agendas and biases (all teachers and researchers are humans with differing life experiences) are less likely to have a negative impact on the status of projects if stakeholders ensure students remain the central focus. If stakeholders unite through effective collaboration and communication, their strengths and expertise can more effectively merge to promote student gains. It is important to note that collaboration will not always be harmonious when boundaries were being stretched. However if students and/or their needs were at the centre of the discussion, unity amongst stakeholders in achieving common goals may be easier to achieve.
2. The interrelated nature of the dissemination of commitment, enthusiasm, engagement and passion for research projects is easier when they have been promoted and proven to be valuable, accessible and useable. As described by the total research participant cohort, committed and enthusiastic people can drive evidence-based projects and the dissemination of these qualities are enhanced when people in leadership positions support them. The complexity of the interrelationship of factors relating to the support from school leaders was evident in both scaled and extinct cases. As identified in Part 2, the four, scaled cases presented the positive cyclic sequence of events that resulted from the relationship of enabling factors that flowed from the support of their principal. These enabling factors included time, resources and increased status. These factors were not proven to be effective in isolation and stakeholders continued to link multiple factors in the survey, interview and focus group responses. The data generated

from the two extinct cases also confirmed the importance of the cyclic sequence of factors that flowed from decisions made at a school leadership level. For example, Meg's executive decided to rapidly expand the project due to its success, without collaboratively consulting with other staff members. My new principal did not suggest the completion of my project, but did introduce other demands without increasing time or resources (See Fig. 7.2). Figs. 7.1 and 7.2 present the increasing negative impact of the destructive cycle that resulted from the breakdown in the relationships among RTP factors in both extinct cases. When comparing scaled and extinct cases, the importance of leadership decisions on the relationship of RTP factors was highlighted. Similar RTP factors were connected and became either enablers or inhibitors depending on the sequence of events that resulted from leadership decisions.

3. Research-based projects were more effective when they directly responded to the unique contextual realities in which teachers and students with, or without, disabilities function. The Gantt charts, students monitoring and recording their own results, and the use of technology were all examples of ways that stakeholders employed strategies that best served the needs of their unique settings. Projects were more successfully sustained and scaled when researchers and educators worked as a collaborative team with students in school settings. Increased stakeholder support and involvement in project decisions and inclusion of the projects in whole school policies and programs also contributed to the increased status and the likelihood of project sustainment and scaling. Sam described how she presented the features of her project in a scaffolded way to her staff. Her comments described that she shared the new knowledge gained from the university-based course through constant modelling and feedback. Increased confidence led to increased involvement. Mary, along with all other participants supported, this relationship and increased ownership seemed a natural progression as projects progressed.
4. Educators in schools and universities were described as significant change agents and referred to as being critical in transferring and matching research-based projects to the characteristics and uniqueness of students and their settings. The dissemination of research is strengthened when researchers work collaboratively with educators to empower them with the skills and knowledge to further disseminate and demonstrate research projects to colleagues, students and parents in school and community settings. In some cases the students themselves were also advocates for effective research and proved to be able to self-monitor and motivate other students, teachers and school leaders. All participants agreed that the increased number of stakeholders with research-based knowledge, skills and capacity contributed to a stronger intellectual knowledge base. This was combined with the relevant practical skills in four of the scaled cases to demonstrate how this relationship enhanced the scalability potential and sustainment of evidence-based projects within schools.
5. Increasing stakeholder knowledge and their willingness and ability to share this new knowledge across schools and systems was presented as a way of earning respect from their peers and increasing status. Increased respect and status

amongst peers can have a positive impact on the sustainment and scaling of research-based projects in school applications. Principals and school leaders can be vital in supporting strong relationships that contribute to increasing the status of the project.

8.2.3 Engaging Effective Projects Can Address the Diverse Needs of Multiple Stakeholders

This study identified the relationship among the RTP factors that impacted upon the status of projects within a range of schools under differing conditions. Research-based projects that presented an increase in student results were sought after. The analysis of the results identified four suggestions that have been generated within the non-exclusive theme pertaining to enhancing the positive sustainment of research projects. These suggestions offer ways that the content of the projects can be implemented to meet the diverse needs of multiple stakeholders:

1. All teachers explained that projects must be conceptualized with an accurate awareness of contextual realities. It was acknowledged that classrooms and school staff members experience different competing demands to university-based staff. Projects that are developed in light of school-based realities and contextual demands are more likely to be responsive to the needs of stakeholders and valued by educational practitioners. Teachers were unable to comment on the demands of the school-based settings without commenting on support from the school leaders. This strengthened the awareness of the significance of the relationship between support from the school leaders and the limiting of competing demands in attempts to reduce the RTP gap.
2. Projects must have the potential to be scaled within educational settings. The sustainment and scaling of evidence-based projects was a natural progression in all case studies once the project became part of the school program or policy. For projects to become sustained in practice they should be able to address the needs of the schools by being scaled successfully so that they can be included in whole school plans. This potential to be scaled can be enhanced when projects address the outcomes related to school system, state and national accountability requirements. The inclusive education administration leaders of a large private school system worked with the university to create a teacher education program that deliberately linked their investment to the state and federal visions for inclusive education. These connections have the capacity to enhance the status of research-based projects and the status of their implementers. This increased status and scalability of research-based projects could be further enhanced through recognition and reward at multiple levels (school, system, state or national) thus, enhancing the potential for research to be used in practical applications.
3. Projects with clearly worded directions and details of background research and contact details to address concerns or questions as they arose were more

appealing and accessible to educators. All teacher participants agreed that responsive and inexpensive web downloads and communication opportunities enhanced the accessibility and usability of research-based projects. An increased opportunity to engage with researchers about projects allowed educators to become more confident users, tutors and advocators for research. All participants highlighted that when they felt supported by the university and school staff, the development of responsive and explicit connections between research and practice continued to evolve. Projects that have access to practical and timely resources, support and assistance were more likely to be implemented, sustained and scaled.

4. Research-based projects that recognised short-term student gains were most successfully implemented and sustained in practice. Accessible literature that supported the practical use of individual projects increased their demand at the school level. Most teacher participants indicated that when the time, resources and effort invested in the project produced strong dividends in terms of student growth, the projects were scaled at a faster rate than expected. Teachers sought projects that demonstrated identifiable student gains in comparison to the investment required in terms of their implementation and sustainment. Projects that met this criterion assisted them in evidence-based reporting to other teachers and parents, which also contributed to the project's increased popularity and demand.

8.3 Connections and Progression

The complexity of linking research and practice in mutually reinforcing ways has consistently posed significant challenges to the sustained use of evidence-based practices in authentic classrooms. The recommendations presented in this chapter strive to present key considerations in balancing theoretical and practical perspectives required for a deeper understanding of the fundamentals critical to sustaining the use of research in practice.

Teacher responses to data collection tools that were developed from researcher insights, informed the 13 recommendations presented in this chapter. This approach served to link researcher and practitioner insights. Both perspectives are critical given the competing demands and differences between research and practice domains (Parts 1 and 2 present the methodological approach employed to merge the work, knowledge and visions of researchers, teachers and global inclusive education policy). The three core areas and recommendations presented are embedded in research and practice dualities, and were foundational to the development of the RTP cycle.

The RTP cycle, introduced in the following chapter, is a visual metaphor entrenched in tangible research and practice connections. It presents complementary enabling forces that interact to create a dynamic system in which the whole is greater than any part. In essence the cyclic nature of the RTP model gives capacity to the recommendations highlighted in this chapter as it allows for a consistent

evolution that unites RTP factors, themes and core components in a responsive and progressive way.

Key Points

- This chapter strengthens and validates the knowledge accumulated over the past four decades of RTP work to guide teachers in actioning inclusive education policies by sustaining the implementation of research based projects in practice to respond to students with diverse learning needs.
- The importance of the connections and relationships among consistent RTP factors is reinforced.
- The same RTP factors were identified across all six RTP cases, yet flexible alignments between RTP factors are essential for research to be sustained in unique school settings.
- These same RTP factors can be both enablers and inhibitors in RTP initiatives depending on the type of relationships that develop between them. These *inter-relationships* among RTP factors have been proven to have a greater impact on reducing the RTP gap than a list of isolated factors.
- This chapter highlights 13 recommendations of ways to reduce the RTP gap in education. They are presented through three core areas: people and their capacity, the projects and their content and preparation and its context. Links across all areas were identified as being essential if the RTP gap is to be reduced.

Chapter 9

The RTP Model: An Interactive Research to Practice Framework

Educational research is a shared commitment between dedicated teachers and motivated researchers with common goals and high expectations.

Abstract Increasing ways in which teachers and researchers could benefit from linking each others knowledge and skill to enhance the use of substantive research based knowledge to assist the growth, development and outcomes of students is at the core of this work. This chapter builds on the existing knowledge to present an interactive framework for research to be effectively translated to practice to address diverse student needs within inclusive classroom contexts. The RTP Model was developed as a result of the intentionally structured and staged methodology. It reinforced the conclusions drawn from this work and may be replicated as a framework for future practice based investigations. Given the significance of the phases of the methodological approach, an overview of each phase is presented as a possible pathway for teachers and researchers to employ when investigating similar phenomenon in different applications.

This chapter aims to:

- presents a brief overview the three phases of the study to enhance the comprehension and significance of the RTP Model.
- highlight key findings of this study in relation to the phased research questions as this approach gave capacity to the evolution of RTP Model which was embedded in RTP literature and informed by six specific school based cases.
- introduce an interactive framework, titled the RTP Model, as a segway for research to be effectively translated to practice to address diverse student needs.
- summarise an intentionally structured and staged methodology that may be utilised as a pathway for teachers and researchers to employ when investigating similar phenomenon.

This chapter is presented in two sections and is organized around the research questions within the three phases of the study. It first presents a brief overview of the phases. Second, a summary of the key findings in relation to the research questions is presented. Comprehending this approach and knowledge will give capacity to the

RTP Model as it draws upon the literature as reflected in the methodology and is informed by six specific RTP cases. Promoting an understanding of RTP through the consideration of the three phases, factors and interactions required to bridge the RTP gap aims to provide a segway forward in this ongoing hurdle for both researchers and practitioners.

9.1 Brief Overview of the Three Phases of this Study

The first, **exploration** phase, sought participants' initial reports of what they thought to be important to making research stick in their classrooms and schools. This information was collected from participants prior to their introduction to the literature based knowledge (through Part 1 of the survey and the first round of interviews). These details were later compared to the 16 succinct RTP factors that were derived from the literature. During the second **explanation** phase, participants were introduced to the 75 RTP factors (collected from five bodies of literature) described in part 2 of the survey. Participants responded to whether these factors were identified in their cases using a numerical (1–5) Likert scale. They also presented written responses to open-ended questions about other RTP factors that significantly contributed to the status of their projects at various stages of implementation.

The final data collection stage, the **expansion** phase, consisted of an opportunity for all participants to contribute to a focus group discussion. The results collected during this phase confirmed existing responses and expanded upon the complexities, consistencies and differences in the interrelations among the factors that enabled and enhanced the scaling of four cases and contributed to the extinction of two others. Participants described and compared ways in which similar RTP factors worked together to strengthen the status of four projects whilst that same RTP factors worked against each other to reduce the status of two cases. These interrelationships were presented through four themes including: **collaboration and feedback, leadership, scalability of projects and teacher education**. These themes were derived from the consistencies identified across the participant responses in all phases and the RTP literature.

The following section presents the key conclusions in advancing the sustained use of research in practice as identified in the analysis of the knowledge gathered through the three phases of this research. The research questions within each phase are presented firstly and they are followed by a discussion of the research to practice knowledge generated in response.

9.2 Overview of the Key Conclusions and Insights Gained Through Each Phase of this Research

9.2.1 Exploration Phase Key Conclusions

Research question: What factors have been identified by research participants that contribute to sustaining research-based projects in inclusive educational settings? What factors have been identified in previous literatures that contribute to sustaining research-based projects in inclusive educational settings? How have these factors been identified? What RTP factors were identified through initial teacher interviews?

The discussion of RTP in the literature was extensive. The research articles presented in the review of the literature supported the major themes identified in opinion papers and reflective essays. These major themes included ways to assist researchers and practitioners in working collaboratively to support each other in ensuring research is responsive and sustainable in inclusive classroom contexts.

Participants from primary to secondary schools expressed that projects were stronger if they responded to organisational demands, displayed tolerance for initial implementation difficulties, recognised accomplishments and encouraged feedback on multiple levels. All participating teachers confirmed that attention should be given to the practicality of projects in terms of time and resourcing if they were to be sustained over time. They also expressed the need to incorporate empirically derived educational practices into the instructional repertoire of educators in order to reduce the RTP gap. The responses of the teachers supported the need to conceptualise the relationship between research and practice so that classrooms become more responsive to all students is essential.

Individual accounts presented examples of how researchers and teachers worked together in an education system sponsored initiative. All stakeholders felt positive about establishing long-term collaborative partnerships between schools and universities to facilitate change and enhance sustainability.

Teachers' all indicated that reducing the RTP gap is only possible when educators are well informed and actively involved in the research process. Although challenges such as time management concerns and fatigue in addressing competing demands did exist in each of the six cases, overall, the four cases that were scaled successfully and the two that became extinct reflected the factors highlighted in the RTP literature. These included participants prioritising the importance of well-designed teacher education programs, which were collaborative, coherent, and responsive to stakeholder needs, and provide support and feedback.

All teachers explained that attention should be paid to organisational issues that worked, such as the practicality of their projects in terms of time and resourcing if they were to be sustained over time. They also expressed the need to incorporate empirically derived educational practices into the instructional repertoire of educators in order to reduce the RTP gap.

There were high levels of consistency describing the positive impact of the Master's teaching team on their depth of knowledge and ability to implement selected projects in their schools. All participants shared the sentiment that the merger of theoretical knowledge with the practical requirements of the course (set by the Masters degree teaching team), promoted deeper involvement as all participants had to justify, implement and monitor selected research-based projects and their decisions.

In brief, during the exploration phase teachers confirmed the RTP factors identified in existing research and went beyond this data to identify the benefits of parental support and individual stakeholders own determination to succeed. These included the benefits of responding to parent's questions and expectations about the projects once they were aware of the projects' implementation and strengths. The determination of individuals and their desire to achieve desired project outcomes was described as having an *infectious* impact, encouraging other stakeholders to participate. In addition, the importance of the interaction among the RTP factors on the sustainment of projects rather than the need for a list of isolated RTP factors began to emerge during this introductory phase.

Findings from the exploration phase confirmed the importance of all the RTP factors derived from the literature except for the need for reward or acknowledgement. All participants were more concerned about the projects and the gains of their students than their own potential for financial reward or the acknowledgement of their efforts. The same factors were described in all cases irrespective of their status (e.g., sustained, scaled or extinct). The critical difference was the way in which the participants defined the alignment or relationship among the factors. These descriptions were derived from the rich case examples that identified the way the factors worked well together or against each other to strengthen, scale or contribute to the extinction of cases. Those cases that became extinct were characterized by marked changes in the interrelationships among the identified RTP factors over the course of their implementation and sustainment. These findings highlighted the importance of the relationship among identified factors upon the trajectories of RTP efforts.

9.2.2 Explanation Phase Key Conclusions

Research question: How did factors identified in the literature contribute to the status of research-based projects in inclusive education settings? Describe any additional RTP factors identified by participants as a result of their direct experiences? In what ways did those factors exert an influence?

The data collected through the first phase was used to develop the questions for the second round of individual interviews and Part 2 of the survey. This generative approach to instrument development made for a deeper explanation of the factors enabling participants to clarify, confirm and expand upon data gathered in the exploration phase. In Part 2 of the survey, participants were required to rate the presence of RTP factors within their cases over the first 3 years of their project implementation.

In all cases, the responses made during the semi-structured interviews were consistent with and expanded upon the written survey responses and comments made during open-ended interviews. Factors derived from the literature that were not identified by participants during the exploration phase were generally reported to be present during this explanation phase (see results chapter for specific rating of factors). The more specific responses that were presented by the participants originated from the more specific questions developed as part of the methodology whereby the information gleaned from the exploration phase was used to create more explicit questions.

A major finding of this phase of the study was that participants were not able to isolate RTP factors in their explanations of the experiences at their settings. During the explanation phase, the findings departed from those described in the RTP literature, which tended to focus upon factors not relationships (as was identified in the work of Carnine (1997) and Sydoriak & Fields (1997) who summarized these factors in their six principles). Participants indicated that they needed to take up the connections among the factors to fully articulate and explain the way their projects interacted with the settings. The depth of the responses went beyond the descriptions provided in the previous phase and included explicit examples of the multiple and complex connections among the identified RTP factors that developed and changed over a 3-year period. An example of this includes the way all participants made reference to collaboration when responding to questions. Each participant described the way in which their shared TE experience modelled effective collaboration and demonstrated the need and impact of a complete framework that weaved practical experiences and theory into a single approach to understand and experience both dimensions of collaborative cultures. Many participants also made reference to the need for ongoing feedback and communication in their explanations of ways in which collaboration was enhanced or deteriorated at their settings. While this was identified as a factor in the exploration phase, the elaboration provided in this phase gave clear meaning and context to the role and place of collaboration.

Leadership support was another example of a factor that could not be isolated from other sources of influence. It was raised by participants in conjunction with other factors including the allocation of the required time, resources and increased project status within schools. The removal of leadership support was linked to the gradual breakdown in the allocation of time, shared responsibility, and communication opportunities. This lack of support and connection among factors was further linked to a reduction in project status as demands placed on staff members increased.

These results indicate that implementing a research-based project is dependent on the interconnection of a combination of factors as RTP is a process and not a single event. There was consensus among participants that without these interconnections among factors, the success of research-based project sustainment would be compromised and the RTP gap expanded rather than narrowed.

Overall, the explanation phase provided a deeper explanation of the way in which RTP factors contributed to the status of the individual cases. Positive cycles were described in the four scaled cases where the connections among the RTP factors became reinforcing. When the connections among the RTP factors began to break

down in both Meg's and my cases, the positive impact of multiple RTP factors working together began to deteriorate. The gains derived from the projects began to diminish. They gradually lost traction and sustainability in their classroom applications and eventually became extinct.

Wilma, Sam, Mary and Diane's cases demonstrated how the connections among and across factors continued to positively impact the status of their projects. A significant connection that resonated across all cases was the importance of well-aligned and successfully maintained relationships among school leaders and staff working toward mutually aligned goals. In each of these four cases, all stakeholders worked collaboratively to address student needs. All four projects became part of individual whole school plans and were successfully scaled within and beyond their settings. The participants who coordinated the two cases that became extinct confirmed the importance of these factors. Each experienced significant difficulties maintaining their projects when connections among these RTP factors began to deteriorate.

All cases continued to echo the findings of the previous phase and emphasized the requirement and type of RTP factors essential to ensure research projects are successfully implemented in classroom applications. During this phase participants went further to describe three common core areas and the connections essential to research projects becoming routine practice in school settings. These included the people involved, their preparation, and the reliability, scalability and accessibility of the research-based projects being implemented. There were differences however between the literature and the data collected as a result of the practical application of the six cases. None of the participants were able to isolate the projects from the people involved and their preparation in their descriptions of the practical RTP accounts. Projects, people and preparation must work together in a reinforcing way. There was strong consistency in reports from participants that when the three basic core areas were successfully united in real contexts, the capacity of stakeholders to access usable and relevant content and implement projects effectively was strengthened.

In summary, the importance of RTP factors working together to reduce the RTP gap was confirmed in cases that became scaled as well as those that became extinct. The importance of the connection or relationship among RTP factors on the sustainability of research-based projects in practice was further reinforced as participant responses became more detailed. The projects became less effective when the connection among the RTP factors began to reduce. The impact of the changing relationship among the RTP factors on the status of the projects became increasingly evident. The two cases that became extinct demonstrated the impact of these weakening relationships in the reduction in strength and status of two different RTP examples. As the status of the two projects that became extinct began to diminish, a definite change in direction from a positive cycle to a negative cycle became evident. Instead of factors working together to create a harmonious and reinforcing progression, as they did in the other four cases, their connections became fractured, reducing the gains originally identified within these cases.

9.2.3 *Expansion Phase Key Conclusions*

Research question: What factors and relationships, among them contributed to the status of research-based projects in inclusive education settings?

During this final phase of the project, all teacher participants contributed to a joint focus group discussion about their projects. Teachers were able to share details about their project implementation and compare various aspects of their projects across cases. Initial comments made in this focus group echoed the importance of the factors identified by participants in the exploration phase and the need for strong relationships among these factors. During the expansion phase discussions included the shared teacher education course being a *lived experience* and the need for flexible feedback that addressed the changing needs of the staff and students within a complete school-wide approach. The focus group methodology made collective dialogue possible. It generated deeper discussions among participants to confirm and expand upon themes and the responsive relationship among them. Consistencies in response and a discussion of the single area where opinions were divided emerged during this phase.

The comparing and contrasting by participants elicited the deepest knowledge of the projects' strengths and the way the projects were implemented, sustained, scaled or became extinct. During the extensive discussion participants described the fundamental importance of the impact of the connection and interrelationship among RTP factors.

The following examples provide specific demonstrations of the importance of RTP factors working together. These examples reveal how the same RTP factors (that were identified in both the RTP literature and six practical case examples) are referred to in interconnecting ways to create reinforcing cycles that utilised research-based projects to address student needs in individual settings. Knowledge of these complex connections became authenticated as case example comparisons demonstrated how the same RTP factors materialised and functioned differently across settings.

The first two examples identify how factors were positively united in a reinforcing cycle to address the needs of the students at different settings. The second two examples identify how the connections among the same factors became compromised and the projects deteriorated. The conclusions derived from the following examples highlight that although the same factors are consistently cited, it is the understanding of the different and complex relationships among them that is more important if the RTP gap is to be reduced.

The practical impact of the connections among the support of the leadership, shared accountability, and communication were described in four cases. Sam's account emphasized the way ongoing support from her school leaders led to assigned staff meeting time and other frequent communication opportunities that enabled her staff to effectively respond to teacher concerns soon after they arose. She indicated that she was given release time to work with staff in their classrooms. This encouraged formal and informal discussions on a regular basis. With

opportunities for increased communication the need for explicit language that was understood by all became increasingly evident. All parties shared an understanding of terminology that was used consistently with parents and outside agencies.

Diane elaborated on the way consistent leadership support, encouraged the time-tabling of regular meetings with support staff and across the whole school. Diane explained that the inclusion of her project in the secondary setting encouraged communication with staff across different faculties. Those not directly involved in the project began asking for feedback about project content and student gains, that in turn led to shared interest and increased potential for collaboration. As consistent feedback was sought, increased opportunities for communication were also woven into grade-level meetings.

Both cases that became extinct confirmed the importance of the reinforcing relationship among RTP factors highlighting the way the connections can deteriorate. Meg and I attributed the lack of connection among the same factors as having an adverse impact on the scaling of our cases in previous phases.

In Meg's case the support of her leadership team was strong and active yet the decisions to expand the project without consulting other staff members led to staff feeling overwhelmed. When stakeholders became concerned that they were not consulted prior to the decision to scale the project their ownership, support and interest in the project reduced. Although project meetings were still held, the contributions of some stakeholders reduced and a subtle divide in staff resulted as communication among interested and non-interested stakeholders diminished. In my case, I described that the new principal and deputy did not directly order the termination of the project yet their lack of verbal support, interest and resources contributed to a reduction in commitment to the project. This in turn resulted in a lack of time for essential project requirements and the increase of competing demands on stakeholders as other projects became prioritised. Again the breakdown in the connection among the identified factors led to the winding down and gradual extinction of both Meg's and my projects.

The account of the two cases that became extinct made clear the way leadership exerts an influence on time allocation, funding, and decisions to scale that can have a significant impact on the capacity of RTP projects in practical contexts.

All participants agreed that combinations of factors that work well to reinforce each other are required for the effective use of research to address diverse student needs. The examples described referred to the relationship among the same factors being leadership support, shared accountability and communication.

Teachers consistently supported reports and descriptions linking the people involved in the projects, their capacity, the contexts that united schools and universities in preparing teachers and the projects and their content. Throughout this phase participants shared and compared the way in which RTP factors united in reinforcing or damaging ways to create cycles, which positively or negatively impacted on the sustainment, scaling or extinction of their cases.

In summary, the focus group discussion enabled the revisiting and confirmation of the vital relationships participants identified among RTP factors. The consistent reports of the importance of these reinforcing and destructive relationships among

RTP factors may be used to strengthen existing knowledge of ways to reduce the RTP gap.

The well-defined relationships among RTP factors consistently linked the projects, stakeholders and their teacher education preparation. **The form and specific descriptions of the relationships did vary from case to case yet there was consistency in the RTP factors and the need for a balanced alignment within a cyclic connection that supported the same core elements.** The key elements and the RTP factors remained consistent from case to case, yet the cyclic and multi-levelled interaction among the elements varied according to the needs and circumstances of the setting. It became increasingly evident that the stronger or more reinforcing the relationships among RTP factors the more likely the projects were to scale up within and across settings. The following section utilises this collective knowledge to introduce a RTP Model, a visual metaphor, which identifies the connections among the RTP factors. It's recommended application for sustaining the use of research based projects in inclusive schools and classrooms is described.

9.3 Introducing an Interactive Research to Practice Model

An innovative and interactive Research to Practice Model is introduced. This pioneering RTP Model provides practical insights, knowledge and pathways required to successfully respond to diverse needs of students through the sustained implementation of research-based projects. The beneficiaries of this knowledge include teachers, students, principals, system leaders and policy makers. It directly responds to the well articulated need to reduce the research to practice gap by building on previously accumulated knowledge and experience to provide an accessible and practical form with an interactive nature that can address the complexity of this relationship.

The new RTP Model constitutes a visual metaphor created to succinctly summarize and define the themes in the relationships described through this work. The conceptual RTP Model provides an interactive approach that may be adapted to inform multiple applications rather than a sequenced set or list of RTP factors. The model draws upon the literature as reflected in earlier chapters and is informed by the voices and experiences of experienced educators. It is offered as a tool that can be used to both guide and show the interactions that should be considered in RTP projects. In doing so, it may assist in promoting an understanding of RTP through the consideration of the factors and interactions required to reduce the notorious RTP gap.

A school leadership team interested in research-based innovations could use this RTP Model to raise awareness of the extent of the effort that is required to build interconnections to address diverse fundamentals if research-based projects are to be successfully sustained. School principals and system leaders can use the model to frame an assessment of needs and an audit of the current circumstances, variables and dimensions of a school or system. It may be used to frame the process and

inclusions in that process and to initiate the planning at the interface of the entities involved. It can also be used to frame the design of an evaluation of an RTP effort.

Researchers designing applied research can use the RTP Model to ensure that their research addresses the diverse features and relationships presented within the model. This could encourage increased mutual respect among researchers and school-based teachers by promoting opportunities for ongoing and substantive feedback, enabling collaborative efforts to address educational frameworks, and encouraging the use of research-based projects to respond to the needs of all children.

Specific examples of application of the RTP Model are presented.

In brief, the model was developed to make clear the connections across RTP factors and to provide a framework for planning RTP efforts. With increased knowledge of the importance of the interconnections required for the successful implementation and sustainment of research-based projects, stakeholders may better align and attend to the full scope of activity required for a successful RTP effort.

9.4 Framework for Implementing and Sustaining Research Based Practices

Given the need to provide an accessible and practical form to the complexity and interactive nature of the relationships between data collected through this research, a RTP Model was created and conceptualised as the most efficient way of summarizing, integrating and communicating the findings of this study. The RTP Model was developed to enhance a deeper understanding of the complexity of RTP using the RTP literature and the cases. The RTP Model is presented in Fig. 9.1.

The Framework for Implementing and Sustaining Research Based Practices is presented in a hub and spoke configuration. It is a schema for understanding findings from the literature and cases. It is comprised of three main sections; the outer circle, the inner circle and the spokes. It is bound by the elements presented in the outer circle, which, like a tyre represents the interface between a wheel and the ground. The outer circle is comprised of four verbs representing the actions required to give practical application to the model. The four verbs were selected as they characterise the key features of implementation efforts as described in the results section. For example RTP approaches need to be engaging through the enactment of harmonious and balanced relationships among RTP factors so that they are able to move through an effective cycle, to addresses the requirements of varied implementation settings. For RTP efforts to gain traction in a school they need to engage multiple stakeholders to increase their capacity, skills and knowledge in enabling students to benefit from research-based knowledge by enacting with integrity in areas including long term support, well aligned system and policy goals and shared ownership and responsibility.

The specific RTP factors derived from the literature and cases are represented as spokes in the model. Each can exert an influence on the project's status. If one spoke

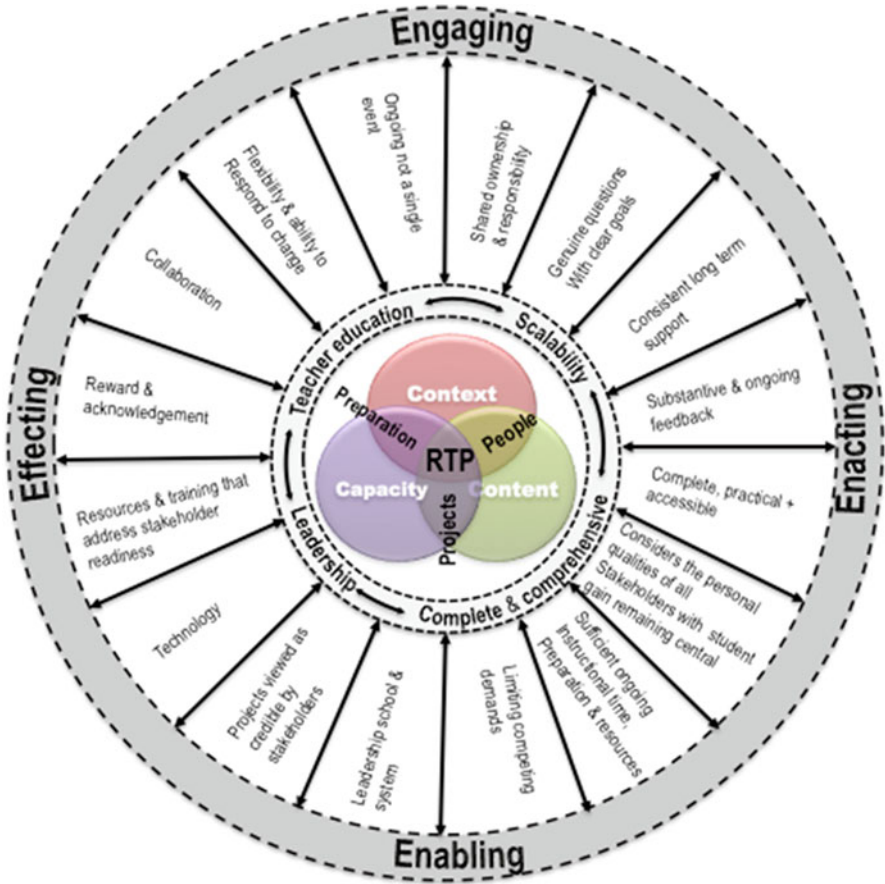


Fig. 9.1 Research to practice model: a framework for implementing and sustaining research based practices (RTP model)

weakens, fails and collapses additional pressure will be placed on the other spokes. If additional spokes fail, excessive pressure will fall onto those spokes that remain and the wheel is more likely to collapse. The hub represents the interactive core or central point of the wheel that coordinates the interaction among the content, context and capacity of RTP efforts.

The inner circle includes an interactive hub the centre of the model, represents the dynamic interaction and intersection of the broader yet vital components including the content of the project, the capacity of stakeholders and the unique contextual variables of school settings. Elements of these components were originally derived from RTP literature, and further validated in the case studies. The analysis of the data collected through this study validated the key big picture components within the inner and outer circle as areas that should be considered when designing realistic and effective RTP projects. The spokes that connect the inner and outer circles

represent the specific factors that constitute the scope and diversity of things to be considered in RTP efforts. The spokes that symbolise the more specific 16 RTP factors were consistent within both scaled and extinct cases and existed in differing alignments. The hub and spokes gave structure to the model.

9.4.1 Contextualisation – Examples of the Application of the RTP Model

Examples of the positive application of Mary, Wilma, Sam and Diane's sustained and scaled RTP cases can illustrate the explanatory value of the RTP Model. In Mary's case, the key factors/spokes in her project were timely feedback and the benefits and capacity derived from her experience as a member of the Master's degree cohort. She also identified technological support in the form of the DIBELS website as a key RTP factor. The relationship and interaction among these factors are represented in the hub of the RTP Model. For example, the well-established assessment details gained through the DIBELS project (content) interacted successfully with the needs of school to generate timely ongoing feedback about student performance (context). The capacity of the staff and the use of the DIBELS assessments enhanced an additional contextual factor, the school's technological capability. In turn these content and contextual factors interacted successfully with the needs of stakeholders who found the approach to be successful. In response they engaged with the project and built their personal capacity as result. This successful interaction sustained the project and ultimately resulted in it being scaled to other school settings.

In Wilma's case the primary spokes/factors were the provision of consistent evaluation and feedback throughout the project rather than at the end, and the well-developed student and teacher materials. Wilma also identified that the use of readily accessible and feasible DIBELS assessments supported the needs of the students and the teachers. The interactions among these spokes are represented in the hub of the RTP Model as the number of DIBELS probes available (content) catered for the different number of administrations required to respond to the "at risk" status of the students (capacity). The increased growth in stakeholder knowledge and ability (capacity) to address the needs of the students in the school setting (context) contributed to the ability of the staff to support each other and be supported in their use of the DIBELS assessments. As a result, these content, capacity and contextual factors interacted effectively with the needs of stakeholders to successfully sustain the project within and beyond Wilma's school setting.

The two cases that became extinct demonstrated how the reduction in the interaction among the spokes reduced structural integrity and harmonious links among the elements in the hub (context, capacity and content), which are required for RTP efforts to be sustained. This was evident in Meg's case as the spokes that failed were the lack of shared ownership and responsibility and the decision to rapidly expand

the spelling project by the executive. She also identified the heavy workload she experienced as a factor. It was also evident in my case as the spokes that failed included a lack of unity and shared ownership, and the lack of support from the new school leaders. This contributed to a reduction in time and resources due to the introduction of competing demands from the new school leaders.

A slow and gradual breakdown among the connections of these factors is represented in the hub of the RTP Model. For example, the rapid expansion of Meg's project (content/context) further contributed to Meg's increasing workload (capacity) which contributed to the reduction in shared ownership and responsibility as the staff were not involved in the school decision (context) and ultimately reduced their capacity to expand the project. In my case the lack of unity and shared ownership of the school based project (content/context) that resulted from the lack of support for the project (content) by the school leaders increased the expectations and demands on school staff (capacity).

Gradually the lack of connection among elements in the hub resulted in the disengagement of stakeholders and their support for the project. These interactions among the content and contextual factors reduced. In turn, the capacity of stakeholders to use the speller project content in Meg's case and the use of the DORF assessments content in my case, to address the needs of the students in the school context, was diminished. The lack of balance and synergy in elements identified in the hub of the RTP Model has caused the gradual extinction of the project.

To summarize, the RTP Model constitutes a visual metaphor created to succinctly summarize and define the themes in the relationships described through the three phases of this research. The Model does the following: It highlights in advance of the application of an innovation, those things that need to be considered in such an effort. This RTP Model differs from previous models identified in the RTP literature, as it is a conceptual rather than an instrumental or procedural model. A conceptual model represents entities and the relationships between them while a procedural model is representative of a set of rules embedded into a framework. The conceptual RTP Model provides an interactive approach that may be adapted to inform multiple applications rather than a sequenced set or list of RTP factors. The model draws upon the literature as reflected in the methodology for this study informed by the six cases described here. It is offered as a tool that can be used to both guide and show the interactions that should be considered in RTP projects. In doing so, it may assist in promoting an understanding of RTP through the consideration of the factors and interactions required to bridge the RTP gap in situations similar to those described in this study.

A school leadership team interested in research-based innovations could use this RTP Model to raise awareness of the extent of the effort that is required to build interconnections to address diverse fundamentals if research-based projects are to be successfully sustained. School principals and system leaders can use the model to frame an assessment of needs and an audit of the current circumstances, variables and dimensions of a school or system. It may be used to frame the process and inclusions in that process (the spokes) and to initiate the planning at the interface of

the entities involved. It can also be used to frame the design of an evaluation of an RTP effort.

Researchers designing applied research can use the RTP Model to ensure that their research addresses the diverse features and relationships presented within the model. This could encourage increased mutual respect among researchers and school-based teachers by promoting opportunities for ongoing and substantive feedback, enabling collaborative efforts to address educational frameworks, and encouraging the use of research-based projects to respond to the needs of all children.

In summary, the model was developed to make clear the connections across RTP factors and to provide a framework for planning RTP efforts. With increased knowledge of the importance of the interconnections required for the successful implementation and sustainment of research-based projects, stakeholders may better align and attend to the full scope of activity required for a successful RTP effort.

Key Points

- Increasing ways in which teachers and researchers could benefit from linking each others knowledge and skill to enhance the use of substantive research based knowledge to assist the growth, development and outcomes of students is at the core of this work.
- Findings from the three phased research questions gave capacity to the evolution of RTP Model which was introduce an interactive framework for research to be effectively translated to practice to address diverse student needs
- The RTP Model was developed as a result of the intentionally structured and staged methodology. It reinforced the conclusions drawn from this work and may be replicated as a framework for future practice based investigations.
- The RTP Model is significant and furthers the body of knowledge in the field as it builds on the existing RTP knowledge previously generated by researchers, and provides a framework that can assist educators in their efforts to address school based RTP endeavours to promote inclusion through the use of research-based projects.
- The RTP Model may assist educational researchers to articulate in a coherent and interactive way, important factors that will influence the design, implementation and evaluation of their RTP efforts.
- The purposefully structured methodology described in this research may be utilised as a pathway for teachers and researchers to employ when investigating similar phenomenon.

References

- Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children*, 63(4), 513.
- Sydoriak, D., & Fields, M. (1997). Response to bridging the research-to-practice gap. *Exceptional Children*, 63(4), 529–530.

Chapter 10

Aligning Our Focus with Strengths and Solutions

The prospective benefits of research-based practices are bound by their sustained use

Abstract Many national and international educational policy developers and agencies have presented a strong and focused pledge to providing quality education for all students. This vision has seen an increased commitment to building student knowledge and capacity through the implementation and sustained use of research based programs. Many academic institutions continue to increase their scope beyond the research community to include school based practitioners and policy developers. Education practitioners have welcomed this shared vision and with the collective expertise from both fields, we are now more than ever able to move forward in reducing the gap between research and practice.

This concluding chapter celebrates the knowledge, skills and commitment of researchers and practitioners. It encourages further research using the conceptual RTP Model with the aim of increasing successful student outcomes through the sustained use of research based practices in our schools and classrooms.

This chapter aims to:

- foster a new wave of optimism for the successful and sustained use of evidence based practices to enhance teacher, researcher, student outcomes.
- acknowledge and celebrate that teachers and researchers have succeeded in identifying significant factors that contribute to research becoming practice to enhance student engagement and success.
- propose the use of the RTP Model to support a positive and proactive approach to progressing the ongoing and fruitful co existence between research and practice.
- identify the limitations of this research.
- present future RTP research recommendations and implications for building sustainable school cultures.
- further encourage researchers and practitioners to consider the alignment of factors presented in the conceptual RTP Model so that more teachers and their students, may experience successful outcomes through the sustained use of evidence based practices.

Vignette

Reducing the RTP gap involves improving the collective capacity of both teachers and researchers. As a former classroom and special needs teacher, I have a great deal of respect for the dedication and complex work of teachers. Currently in my role as an academic, my respect for the dedication and complex work of researchers is also alive and well. I feel privileged to be immersed in the area of inclusive education in this challenging yet time of great potential.

Planning, implementing and analysing the data collected through this research from a practitioner and researcher perspective has heightened my understanding of specific RTP factors and the relationships between them. Narrowing the RTP gap and the related potential in terms of student growth continues to motivate me. This excitement and craving for new ‘how to reduce the research to practice gap’ knowledge was the starting point of a personal and professional research to practice journey to comprehend...

Why there was such a passive application of evidence-based practices in schools and education systems when researchers, teachers and policy developers are all striving for the same goal of improving student gains!

After all, the use of research in practice is encouraged globally to progress inclusive school cultures and the ability of individual teachers to respond to the needs of all students. If students succeed then we are also succeeding!

Working towards *success, in terms of reducing the RTP gap*, has been multifaceted and certainly a complex journey. It has been both challenging and rewarding to explore the strengths and complexities of connecting research and practice knowledge, insights and experiences. Of course I found that the ‘miracle’ recipe does not exist and there is not only one definitive response to bridging the RTP gap. What is miraculous is the persistence of teachers and researchers to imagine, explore, trial, rethink and re-imagine workable solutions over the last four decades.

The work explored in this book adds to all that has gone before and moves us forward by validating the RTP factors that were presented in the RTP, PD, TE, CSR and CBAM literature, through six different research to practice cases. This move forward proposes a cyclic approach to research being empowered by practice and practice being empowered by research in interconnected and responsive ways.

In this persistence and exploration teachers and researchers continue to get it right. Let us continue to progress with a new wave of optimism toward the successful and sustained use of research, practice and evidence to enhance teacher, researcher, student engagement and outcomes. It is hoped that these ideas will encourage a positive and proactive approach to progressing ongoing and fruitful research and practice together.

Through my transition from classroom teacher to special education teacher to teacher educator and onto educational researcher, my knowledge of the competing demands between researchers and teachers has been lived. Lessons

(continued)

from past efforts, successes and/or failures have suggested that integrating and aligning the different contextual realities of the research and practice worlds are complicated and at times overwhelming. Part one of this book acknowledges the RTP challenges and insights that have been presented over four decades of research. Part two uses the data collection tools developed from the theoretical knowledge presented in Part one to further explore the RTP literature based factors in practice. Part three introduces a conceptual RTP Model as a way forward in merging research and practice knowledge and expertise to assist with the sustained implementation of a range of research based practices to enhance student outcomes.

Working together in an interconnected, interdependent and complementary manner to strengthen the goal of sustaining the use of research based practices to enhance the success of all students is pivotal to reducing the RTP gap. Dedicated professionals from a range of fields have struggled with the complexity of linking research and practice in mutually reinforcing ways for decades. Diverse and sometimes opposing standpoints have been presented. Cook et al. (2013) reflection on Hambrick's (1994) concept that academics seem to have minimal visibility, innovation and minimal impact as they operate in an "incestuous closed loop" where academics "read each others' papers in our journals and write our own papers so that we may, in turn, have an audience" (Cook et al. 2013, p.13) is one such perspective.

Another perspective is that of Cuban (as cited in Schneider 2014) who reflects on the deep disappointment of how little research has positively impacted upon classroom practice. Reasons for the disconnect between research and practice include the irrelevance and inaccessibility of research and the contextual constraints experienced by teachers. Teachers relying only on experience-based knowledge and skills gained from prior practice and the wisdom of respected colleagues, may also be considered to be another "closed loop" with limited access to new knowledge.

This book strives to escape from notions of *closed researcher or practitioner loops* and introduces a reinforcing cyclic approach to collaboratively working toward the common goal of enhancing student outcomes and sense of belonging through the use of evidence based practices. Understandably the potential benefits of research based practices are bound by their sustained use and this three phased complex investigation has generated a RTP Model designed to promote sustained use.

The RTP Model presents a visual metaphor to further our knowledge on how to successfully implement and sustain a mutually reinforcing relationship between research and practice. It has been founded in the work of researchers and teachers and emphasizes the importance of the responsive alignment between the RTP factors.

The next step in narrowing the RTP gap is driven by a current wave of optimism that has evolved from the consistent concerns articulated in the RTP literature. It acknowledges the competing demands experienced by researchers

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and practitioners and celebrates their distinct expertise through the common goal based on enhancing student success. Comprehending both researcher and teacher perspective allows stakeholders to learn from each other, so that mutual goals and benefits can be reaped. Each is strengthened by the other.

The RTP Model strives to enhance positive traction in interactions that are responsive to authentic contextual realities in a feasible and flexible way. It is hoped that traction will be build momentum over time as more people get involved and more knowledge on the sustainment of evidence based practices can be mobilised. Without commitment from a range of stakeholders such initiatives can remain sidelined or hobby like. The collective energy, time and commitment from school communities, systems and researchers may be viewed as a significant investment. The potential rewards, however, have been long desired and have the potential to be beneficial to many.

There is no prescribed or singular clear-cut alignment for success between factors in the model. Such interactions must remain responsive to individual RBP, the implementation setting and stakeholder readiness levels and needs. When researchers and teachers see a clear connection between RBP and authentic classroom practice, their ownership and commitment may increase. Fostering opportunities for collaborative researcher and teacher formative feedback in their use of the RTP Model would also be beneficial as shared insights are paramount in the continuing successful implementation of research-based strategies to maximise student learning. Although the road to success is always under construction, the RTP cycle is entrenched in tangible research and practice knowledge whose connections can be complementary enabling forces that interact to create a dynamic system in which the whole is greater than either part. In essence the cyclic nature of the RTP model allows for consistent evolution that unites RTP factors, themes and core components in a responsive way.

Although the application of the RTP Model has the potential for generating improved and sustained use of effective research based practices, the limitations of this study must be recognized. It is important to acknowledge that the RTP Model described here was derived from six cases within one education system. While the methodology reconciled the findings from the cases with the full scope of the existing literature, the applicability of the model to other settings needs to be carefully considered by assessing the applicability of the circumstances, contexts and findings associated with the cases described here and those of others to which the model may be applied.

A larger investigation with teachers from a variety of demographically diverse districts would be beneficial in order to make generalizations about teachers' levels of efficacy, professional development, and evaluation. Information was also collected in retrospect. Participants had to reflect on their early project details so it was possible that errors could be made given the 3 years that had lapsed since the original implementation stage. The use of the final Master's projects (permanent product records, which were completed as the projects were being planned and implemented), were used to confirm data collected from the surveys and interviews. A causal comparative case

(continued)

study approach was selected as it allowed for factors to be traced over time (Stoecker 1991, as cited in Yin 1994). Although multiple case studies may be considered a strength (Yin 1994), the fact that all six participants were from the same education system may be considered a limitation. Future research could serve to broaden the range of RTP settings studied.

Location threat as defined by Fraenkel and Wallen (2006) in experimental studies, refers to the concerns of data collection location and details differing in each case. As the projects were implemented in different settings, with different stakeholders, concerns about these different variables did exist. The use of the permanent product record of the projects served to address this limitation.

The projects were predominantly focused on reading instruction and assessment, as this was a priority of the school system. This may be considered a limitation as RTP may manifest differently with different project foci. Additional research with research-based interventions other than literacy would be beneficial.

A further limitation of the study was that the baseline condition of individual schools varied in terms of their readiness for RTP interventions. While this is a normal and expected source of variation, it is important to acknowledge that these conditions may have exerted an influence on the findings in ways other than those focused upon in this study of RTP. Participants did report a degree of readiness in their settings for the implementation of their projects. Following are recommendations for future research which may be beneficial in the light of these identified limitations.

10.1 Recommendations for Future Research

One recommendation for future research from this study is to document the thoughts and experiences of the university academics that designed the Master's course in conjunction with the school system office. Further data defining the nature and scope of the collaboration between the university and education system may provide additional insight into the variables involved in designing and delivering high quality professional development centred around research-based practices. Additional data of this nature could further elucidate those variables that enhance the capacity of professionals in bringing research-based practices to scale from a systems perspective. Findings from this research may have the capacity to inform the literature in collaboration, teacher preparation and high quality professional development.

The complexity of the intersecting and interrelated nature of the factors that influenced the successful translation of research to practice was a key finding of this study. Prior research identified numerous discrete RTP factors and how as isolated variables they had an impact on the scaling of research-based practices in educational settings. Additional research examining the nature of the relationships between RTP variables that exert the strongest influence on the translation of research to practice would provide insightful information for both researchers and practitioners seeking to implement and sustain research-based practices in applied settings.

Finally, given the RTP Model presented resulted from a comprehensive analysis of the RTP literature and the six case studies presented in this investigation, further research is required to empirically test the efficacy of the Research to Practice model on a broader scale. Future studies must determine whether the model is robust to differences in individual teacher capacity, implementation setting, educational systems, program/project implementation, professional development and so on. The model could be tested through a larger longitudinal study and/or applied to large-scale programs currently underway, such as the National Partnerships Smarter Schools program.

10.2 Conclusion

The purpose of this study was to contribute to narrowing the well-documented RTP gap by promoting the use of research to address the needs of a diverse range of students within inclusive school settings. The knowledge gained can be applied to assist teachers, principals, system leaders and policy makers in successfully responding to students through the sustained implementation of research-based projects. As a result of this investigative work six major findings can be drawn.

These findings include:

1. The significance and validation of RTP factors that were identified through five bodies of commentary and research literature.
2. The importance of teacher education in raising awareness and skill in relation to all components of the RTP Model and conversely raising the awareness of these significant considerations required when planning and designing future teacher education programs.
3. Raised comprehension of the complex and diverse interconnections and interactions essential to bridge the RTP gap and the importance of presenting them in a guiding and responsive manner that is comprehensive and accessible.
4. Development of a RTP Model to raise awareness of the complete schema that needs to be considered and addressed for the implementation of research-based projects.
5. Ways in which researchers and educators can build on the strengths of their experiences to develop meaningful and long term connections to design complete RTP efforts that benefit from the range of standpoints to assist the education of students.
6. The knowledge and validation of individual RTP factors is beneficial, yet comprehending the complex interrelationships among these factors is key to enhancing and sustaining the use of research-based projects in school settings. For all students to benefit from validated and effective research-based projects the preparation of stakeholders must consider the ongoing, evolving and cyclic relationships, which enable a reduction in the RTP gap.

10.3 Moving Forward

The challenge is to communicate the complexities in ways that people can journey through the complexity in ways that are not paralysing but empowering. Bjarne Stroustrup

Over that last four decades educators, researchers and policy makers alike have found it easy to articulate the vision that research should guide practice and practice should inform research, however, our collective efforts have confirmed that actioning this vision is rather complex. The factors critical to the best research informing the best practice (and vice versa) are clearly articulated and seemingly simple, yet aligning them in responsive and reinforcing ways is complex. Nonetheless, this alignment should be experienced seamlessly to enhance productive pedagogical practices which realise our shared goal of maximising individual and collective outcomes.

I'd encourage governments, universities, school systems, teachers and educational agencies to consider the application of the RTP model to give traction to workable solutions which connect research and practice knowledge and skills in tangible ways. A list of isolated RTP factors is not effective in reducing the RTP gap. However, the use of the mutually reinforcing and responsive conceptual framework has the capacity to encourage the right balance and tension of consistent RTP elements, and thus to can give capacity to the shared goal of enhancing student outcomes using validated research.

It is hoped that the increasing knowledge about how research can be implemented and sustained in practice will support teachers in addressing the diverse needs of individual students in our schools. Increasing the successful adoption of research-based practices and extending the scope and potential of new research projects can connect students and teachers in ways that maximize their potential to flourish as individuals, and as classroom members. Aligning the directions, strengths and solutions of researchers, teachers and policy makers, can and will, unleash the benefits of research-based practices only through their supported and sustained use.

Complexity is your enemy. Any fool can make something complicated. It is hard to make something simple. Richard Branson

When asked by my daughter what my research had shown, I knew I had just a few minutes of her attention to describe a complex process, in a meaningful way. I likened the RTP Model to a toy invented by naval engineer Richard James in 1943 at the William Cramp and Sons shipyards in Philadelphia. James was developing springs that could support and stabilize sensitive instruments aboard ships in rough seas when he announced 'if I got the right property of steel and the right tension; I could make it walk.' This toy was the Slinky, meaning sleek and graceful. It consisted of a flexible helical spring that could move in responsive ways and somersault whilst still keeping its strength and form. Something so seemingly simple, yet so deeply complex.

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The RTP model is like a slinky. Seemingly simple and deeply complex. The RTP model provides a thinking and action framework that involves, guidance and a supportive form for the sustained and responsive implementation of research into practice. Like the slinky, it's designed to respond to forces in the environment and each unique school and classroom has its own culture, dynamics and motion. The cyclic RTP model provides a complete schema that needs to be considered and applied to support the sustained implementation of research-based projects to respond to the diverse strengths and needs of students. Like James, teachers, researchers, policy developers and initiators need to fully comprehend the intricacies of research and practice and the relationships between them for the tensions and strengths of the spiraling RTP cycle to rotate in responsive ways.

The interconnections and interactions between the RTP factors, themes and elements are essential to bridging the RTP gap, yet they are able to be modified to respond to change or adapt to different circumstance or conditions whilst maintaining strength and form. The factors critical to the best research informing the best practice (and vice versa) are seemingly simple, and at the same time aligning them in responsive and reinforcing ways is complex. Yet it does move us forward in sometimes steady, sometimes rapid but often in empowering and rewarding ways.

References

- Cook, B. G., Cook, L., & Landrum, T. J. (2013). Moving research into practice: Can we make dissemination stick? *Exceptional Children*, 79(2), 163–180.
- Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education* (6th ed.). Boston: McGraw-Hill.
- Schneider, J. (2014). *From the Ivory Tower to the Schoolhouse: How scholarship becomes common knowledge in education*. Cambridge: Harvard Education Press.
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks: Sage.

Appendices

Appendix 1: Research-to-Practice Survey (Part 1)

Personal Details

Name:	Age range:
	35–39, 40–44, 45–49, 50–54, 55–59, 60–65

Educational qualifications

(Please complete the fields in the table below)

Qualification	Year attained	University	Duration

Employment Experience -Please begin with current school

(Please complete the fields in the table below)

Name of employer/ school	Years	Grades taught/ special needs	Responsibilities	Executive position/title

Are you currently at the school where your project was implemented? Y/N

Please provide a brief statement on the socio economic status of the community and demographic details of the setting where your project was implemented.

Implementation Setting Details

School name	
Suburb	
Primary/secondary/other	

Please list any other relevant implementation settings details.

Please complete the table below.

Year	Number of students at the school	Number of students involved in the project	Number of staff at the school	Number of staff involved in the project	Number of funded students at the school	Number of funded students involved in the project
1st year						
2nd year						
3rd year						
4th year						

Project Details

Masters research-based project title:

Briefly describe why you selected this type of project for your setting.

Please complete the project details by responding to all the fields in the table below.

Year	Number of students involved	Year level	Number of staff involved	Was the project perceived to be beneficial? Y/N
1st year implementation				
2nd year				
3rd year				
Beyond (prediction)				

If your project was viewed as beneficial please indicate who supported it or you and how?

Did this support change over time? Y/N How did the support change?

Was there a body of research that was used to build this project (for example CBA, CBM, Peer Tutoring)? Y/N Please give brief details.

Was any training available for teachers, administrators or community members involved in implementing the project? If so, please provide details.

Did the project include any materials or resources such as student materials, checklists, teacher guidelines or manuals? Y/N If so, please list them.

Please describe any factors that assisted in your projects initial implementation.

Project Details Continued

Clarification of Operational Conditions

Project extinct – Project terminated at the conclusion of the year.

Partially sustained – Operational beyond year of implementation (course requirement) however, project form was not fully consistent with project guidelines.

Sustained – Project continues to be utilized in the same capacity as it was in the implementation year.

Scaled within setting – project has been utilized with staff/ students beyond those that were planned at the initial implementation year (within the same setting).

Scaled beyond setting – project has been utilized in settings beyond the original implementation setting.

Note implementation year refers to year the project was undertaken as part of the University course requirement.

Using the operational conditions defined above, please tick the box that best describes your project status at the end of each year in the table below.

Year	Project extinct	Partially sustained	Sustained	Scaled within setting	Scaled beyond setting
1st year					
2nd year					
3rd year					
4th year					

What evidence could be given to confirm project status each year? For example participant surveys, standardized results etc.

Question	Yes	No
Do you expect the outcomes/features of your project to continue in and beyond 4th year?		
Do you expect that your project outcomes/features would continue if you were no longer at your project implementation setting?		
Has the Principal or deputy principal changed since the project started?		

Has this influenced the projects status? Y/N If so, how?

Please describe any factors that positively or negatively impacted upon the status of your project during the last 3 years (please include additional pages if required).

Research-to-Practice Survey (Part 2)

Implementation Integrity Checklist (IIC)

Checklist	Yes	No	N/A
1a. Did your project use a pre existing program with guidelines or instructions (for example, CBM, CBA, DIBELS)?			
b. If so were they utilized?			
c. Was there consistency in the implementation of those features?			
d. Were suggested project materials, such as workbooks or manuals used throughout your project?			
e. Were results collected and calculated in accordance with guidelines or instructions provided?			
f. Was the project evaluated using the guidelines or instructions provided?			

2a. Briefly describe how you maintained project implementation integrity during the required University implementation?

b. After the required University implementation period?

c. How was the project evaluated?

Investigation Categories

Please respond with a 1, 2, 3, 4 or 5 in each box of the following four tables

1. Always
 2. Mostly
 3. Sometimes
 4. Rarely
 5. Never
- NA-Project is extinct

Please include additional pages if extended responses can be offered.

Collaboration	1st year	2nd year	3rd year
1.1 Were there opportunities for substantive and frequent communication and interaction with other stakeholders (e.g. project coordinators, staff members, administrators, parents)?			
1.2a Was responsibility of the project shared by all stakeholders?			
1.2b Was ownership of the project shared by all stakeholders?			
1.3 Was there a sense of mutual respect for the project amongst stakeholders?			
1.4 Were there mutually identified			
a. boundaries,			
b. structures and			
c. purposes for the implementation and sustainment of the project?			
1.5 Was there engagement in pursuit of genuine			
a. questions,			
b. problems and			
c. solutions amongst stakeholders?			
1.6 Were stakeholder's co operative?			
1.7 Were system policy goals of your implementation setting well aligned with the goals of the project?			
1.8 Were			
a. norms,			
b. expectations and			
c. roles of the Masters students and University academic staff mutually aligned in relation to the implementation of the project?			
1.9 Was there an awareness of individual strengths of the stakeholders for the purpose of the project?			
1.10 Was there an awareness of the changing needs of the stakeholders throughout the project?			
1.11 Was there a sense of partnership amongst the various levels of stakeholders?			
1.12 Were there opportunities for feedback across multiple levels? E.g. teachers, executive etc.			
1.13 Were teachers provided with an opportunity to contribute to the research project? E.g. through identification of need, design or implementation			
1.14 Did the project create links between theory and practice in your setting?			
1.15a. Were stakeholders united?			
b. Were the intentions of the project understood by all?			

Key Collaboration Components

1.16 Please describe the level of stakeholder “buy in” (interest, involvement) throughout the project?

1.17 Please describe the level of shared ownership of the changing elements or features throughout the project?

1.18 Overall how would you describe collaborative efforts (working jointly towards a common goal) throughout your project? Please include any features that you believed supported or inhibited your project?

Please respond with a 1, 2, 3, 4 or 5 in each box of the following four tables

- 6. Always
- 7. Mostly
- 8. Sometimes
- 9. Rarely
- 10. Never
- NA-Project is extinct

Please include additional pages if extended responses can be offered.

Support	1st year	2nd year	3rd year
2.1 Were			
a. instructional,			
b. monitoring, or materials available to stakeholders?			
2.2 Was adequate time available to implement and support the project?			
2.3 Was leadership support ongoing?			
2.4 Were well developed student materials available to teachers?			
2.5 Did support structures change as the needs of individuals changed?			
2.6 Was technology used as a support?			
2.7 Were teachers sufficiently prepared to participate in your project?			
2.8 Were stakeholders able to seek assistance when required?			

2.9 Was there continuity in support?			
2.10a. Were opportunities for feedback from participants woven into the project design?			
b. Was feedback emergent (helped with what to do next)?			
2.11 Did the project leaders have an awareness of the demands placed on practitioners?			
2.12 Was there a team or a network that was responsible for the projects implementation?			
2.13 Were regular meetings held where stakeholders could share experiences?			
2.14 Did students or project participants whom the project was designed to benefit, respond positively to the project?			
2.15 Did your peer cohort respond positively to the project?			
2.16 Did communication throughout the project include staff from multiple levels?			
2.17a Was the effort involved in bringing the project to the school recognized in feedback on performance from other stakeholders?			
2.18 Was there clear evidence of school based support for the project?			
2.19 Was additional time allocated to stakeholders to maintain the project?			
2.20 Was student learning central to the project?			
2.21 Was evaluation an emergent function (evolved from actions) rather than an add on?			
2.22 Was sufficient instructional time provided by project leaders to ensure stakeholders were familiar with project details?			
2.23 Were stakeholders actively involved in the project?			
2.24 Was the project supported by research?			
2.25 Were instructional leaders supportive of the project?			

Key Support Components

2.26 How were time and resources allocated throughout the project?

2.27 How was consistency in support maintained?

2.28 How were competing demands limited to achieve a balance of multiple agendas?

2.29 Was there initial teacher enthusiasm? Y/N How was this supported, encouraged or enhanced?

2.30 Please describe any other factors/features that supported or inhibited your project (These may include ongoing feedback, shared responsibility, mutual respect/positive student and per responses, pride in achievement or effective communication).

Please respond with a 1, 2, 3, 4 or 5 in each box of the following four tables

- 11. Always
- 12. Mostly
- 13. Sometimes
- 14. Rarely
- 15. Never
- NA-Project is extinct

Please include additional pages if extended responses can be offered.

Responsiveness of research	1st year	2nd year	3rd year
3.1 Did the project provide			
a. specific directions or			
b. materials?			
3.2 Was the project manageable for stakeholders to implement?			
3.3 Was the project supported by research-based evidence?			
3.4 Was the project effective in the contexts of your setting/application?			
3.5 Was the project flexible enough to respond to the changing needs of your setting?			
3.6 Was the project consistently relevant to the needs of the students and staff?			
3.7 Was the project			
a. practical,			
b. feasible and			
c. accessible to participants?			

3.8 Was project data useful in addressing the needs of your setting?			
3.9 Were opportunities available for the development of participants'			
a. practical skills and			
b. knowledge to support the project?			
3.10 Did the project cater for the variance in staff			
a. abilities and			
b. needs?			
3.11 Did the project respond to genuine teacher concerns?			
3.12 Was the project responsive to the needs of classroom contexts?			
3.13 Did the project have the potential to be scaled beyond its initial planned implementation?			
3.14 Was the project a good contextual fit (with your implementation setting)?			
3.15 Was the project valued by students?			
3.16 Were the project features adopted effectively?			
3.17 Did the project respond to the personal growth in skills of stakeholders?			
3.18 Would you describe your project as a process rather than an event?			
3.19 Would you describe your project as having the potential for a school level design for a school level influence?			
3.20 Would you describe your project as self reinforcing?			

Key Responsiveness of Research Components

3.21 How was the research responsive to perceived practitioner need?

3.22 How did the research make a practical difference to the needs of your students, stakeholders and setting?

3.23 How was the research responsive to organisational demands of your setting?

3.24 Are there any other factors or features that contributed to or inhibited your projects responsiveness to the needs of your setting?

Please include additional pages if extended responses can be offered

Teacher education master's course	Always	Mostly	Sometimes	Rarely	Never
4.1 Was the teacher education project based on a complete theoretical framework?					
4.2 Was there consistency in					
a. design and					
b. implementation within and across all course subjects?					
4.3 Was the course design					
a. adequate and					
b. complete?					
4.4 Did the course provide a useful intersection of process and content?					
4.5 Did University staff and School System staff members share					
a. mutually aligned norms,					
b. expectations					
c. and roles?					
4.6 Was the course structure					
a. responsive and					
b. cohesive?					
4.7a Was there consistency in the marking of all subjects?					
4.7b Did the course provide effective delivery of intended key components?					
4.8 Did the teacher preparation experience maintain flexibility to ensure project designs could be responsive to unique educational environments?					

Key Teacher Education Components

4.9 Were there any features of a theoretical framework / schema around which the course was designed that assisted in the design and implementation of the project? If so please outline them.

4.10 How was the course design responsive to practitioner needs and the needs of the unique project settings?

4.11 How did the consistency in the design of subjects and their implementation influence your project?

4.12 Did your project replicate or modify any feature of the course design? How? (For example, the embedding of key ideas within and across subjects)

4.13 Please include any other comments about the ways in which the course design and implementation positively or negatively impacted the status of the research project?

Overview of Responses to Research-to-Practice Survey (Part 2)

Key	1st year			2nd year			3rd year					
	Chris	Mary	Diane	Wilma	Sam	Meg	Chris	Mary	Diane	Wilma	Sam	Meg
1 – Always; 2 – Mostly; 3 – Sometimes 4 – Rarely; 5 – Never; Blank – No Response												
Collaboration												
1.1 Were there opportunities for substantive and frequent communication and interaction with other stakeholders (e.g. project coordinators, staff members, administrators, parents)?	2		1	1	2	1	2	1	1	1	1	3
1.2a Was responsibility of the project shared by all stakeholders?	2		2	2	4	1	2	2	2	1	3	3
1.2b Was ownership of the project shared by all stakeholders?	2		2	1			2	2	2	2	3	3
1.3 Was there a sense of mutual respect for the project amongst stakeholders?	2		1	1	1	1	2	2	1	1	3	2
1.4 Were there mutually identified												
a. boundaries,	2		1	1	1	1	2	2	1	1	4	2
b. structures, and	2		1	1	1	1	2	2	1	1	4	2
c. purposes for the implementation and	1		2	1	1	1	2	3	2	1	4	2
sustainment of the project?												

(continued)

1.11 Was there a sense of partnership amongst the various levels of stakeholders?	2		3	2	3	1	2	1	1	3	1	3	1	3	3	3
1.12 Were there opportunities for feedback across multiple levels? E.g. teachers, executive etc.	2	2	1	2	2	1	3	2	1	3	1	2	1	2	2	3
1.13 Were teachers provided with an opportunity to contribute to the research project? E.g through identification of need, design or implementation.	1	2	2	4	1	1	2	2	1	3	2	2	1	4	4	4
1.14 Did the project create links between theory and practice in your setting?	1	1	1	1	1	1	2	1	2	2	2	1	2	1	2	2
1.15a Were stakeholders united?	1	2	1	2	1	1	3	2	1	5	2	2	2	2	3	4
b. Were the intentions of the project understood by all?	1	3	1	3	1	1	3	1	2	4	3	1	3	1	3	3
Support																
2.1 Were																
a. instructional,	1	4	1	1	1	1	1	4	1	3	1	4	1	4	1	4
b. monitoring, or materials available to stakeholders?	1	2	1	1	1	1	1	2	1	3	1	2	1	1	1	5
2.2 Was adequate time available to implement and support the project?	1	2	2	1	1	1	2	2	1	3	2	2	2	2	3	3

(continued)

2.12 Was there a team or a network that was responsible for the projects implementation?	1	1	3	1	5	1	3	3	3	3	1	3	1	3
2.13 Were regular meetings held where stakeholders could share experiences?	1	1	1	4	1	2	3	1	4	1	1	3	1	3
2.14 Did students or project participants whom the project was designed to benefit, respond positively to the project?	2	2	1	1	1	2	5	1	2	1	2	1	1	5
2.15 Did your peer cohort respond positively to the project?	1	3	2	1	1	3	1	1	3	2	3	2	1	1
2.16 Did communication throughout the project include staff from multiple levels?	1	3	2	1	1	3	5	2	1	2	3	2	1	1
2.17a Was the effort involved in bringing the project to the school recognized in feedback on performance from other stakeholders?	2	2	2	1	2	2	2	1	4	2	2	2	2	3
2.18 Was there clear evidence of school based support for the project?	1	2	1	1	1	2	1	1	3	1	2	2	1	5
2.19 Was additional time allocated to stakeholders to maintain the project?	1	4	1	1	1	2	1	1	5	1	2	2	3	1

(continued)

Appendix 2: Open Ended Interview Questions

Open Ended Interview Questions

1	Could you please briefly describe your project?
2	How was your project designed to meet the specific needs of your setting?
3	What were the project’s objectives?
4	Did it meet these objectives? How? Or why not?
5	What is the current status? How did it change over time?
6	What factors influenced that status of your project over the period of its implementation?
7	How did the master’s course influence the project? Were there specific features that exerted an influence on your project?
8	Did you replicate any aspect of the Masters course in your setting?
9	Was there a sense that your efforts were making a difference?
10	Were there any other factors that you feel may have contributed to the status of your project?
11	Is there anything else you would like to add that influenced the implementation or extinction of your project?
12	To conclude, from your experience what would you say are the main that factors influence the translation of research-into-practice in inclusive education settings?

Appendix 3: Semi Structured Interview

Semi Structured Interview

Now that you have looked at the survey which identifies the literature based RTP assertions, my aim is to try to get a deeper understanding of what processes and structures unfolded at your school that contributed to the factors you identified in the first interview and survey.

Collaboration

Collaboration is a general and widely interpreted term.

1. How is collaboration structured at your school?
2. **Can you describe any specific features/examples of collaboration that promoted the project’s implementation? Was there anything that inhibited it?**
3. How did examples of collaboration impact the sustainment or extinction of your project?

Ask if the answer to your priority follow-ups do not emerge from the answers to the above questions:

16. How did collaboration change throughout the project?
17. What practical actions/features promoted collaboration with your settings?
18. Was there anything that hampered collaborative efforts in your school?

Support

The need for different types of support (including time, resources, peer, executive support) rated highly in interviews and survey.

4. How would you describe the supports at your setting?
5. How did your educational system support the project?
6. How could the education department support the use of research-based projects in our schools?
7. How did stakeholder “buy in” increase as the project success increased? Why?
8. Are there any specific types or levels of support that stand out in terms of the way the project was influenced?

Ask if the answer to your priority follow-ups do not emerge from the answers to the above questions:

19. What school structures were in place to support the project and staff?

Leadership

Leadership has been presented as being a strong contributor to the projects’ status.

9. Please describe the leadership style of your principal?
10. How did this leadership style impact on your project? Please give examples.
11. In what ways did you provide a unique contribution to the implementation and sustainment of the project? What characteristics, skills or strengths did you require to do this?

Ask if the answer to your priority follow-ups do not emerge from the answers to the above questions:

- What effect did leadership have in your setting?
- How did it manifest in the organization in practical ways and how did it affect the project?

Teacher Education

Increasing teacher knowledge of research has been suggested as being important to the practical applications of projects.

12. How did features of the university course have an impact on your knowledge and skill level in promoting the use of research-based projects?
13. What aspects of the degree helped with the design and implementation of the project?
14. How was research-based knowledge delivered to staff at your school? Was it then used by them?

Ask if the answer to your priority follow-ups do not emerge from the answers to the above questions:

- Is there any aspect of the course that you would change or modify?

Practical Implementation and Responsiveness of Research

15. How is technology used in your project?
16. How could technology be used to gather feedback about the project? How could this happen formally? Informally?
17. What structures were in place to maximize the use of standardised results or research-based knowledge? Did this change over time?
18. How did your setting address competing demands placed on teachers? How were workloads structured? Shared?
19. How would you describe the standing of this project in terms of the school's priorities? Has that changed over time?
20. How was the project given status and why?
21. How was the implementation of this project different from other projects you have experienced? Use?
22. How did “buy in” increase as the project success increased? How did that impact upon the role of the project itself?
23. Feedback was also identified as a key factor. How was feedback incorporated into the design of your project?

Ask if the answer to your priority follow-ups do not emerge from the answers to the above questions:

- How could the use of technological support further enhance your project? How would you organise this differently for future projects? Why?
- Can technology be used in a reinforcing way?
- How was/is the projects implementation monitored to ensure integrity?
- What processes were/are in place if concerns re implementation arise/arose?

- A number of the factors associated with successful implementation were not so influential at the beginning so what catalyzed the project in the early stages of implementation?
- What features of your project elicited positive or negative staff attitudes?
- How did consistency in elements, processes or features of your project contribute to its status?

Other

How were you received as you introduced the project? Implemented the project? Could you have enhanced this in any way?

What skills and knowledge would you suggest are critical for project coordinators to pose to ensure research projects are successfully implemented in schools?