

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; Camine 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)	
	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 of research	Responsiveness	Responsiveness of university education programs	Scalability and educational power	Research-based change process

Useable (Billups et al. 1997; Carnine 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 (Carnine 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 et al. 1982)
Accessible (Billups et al. 1997; Carnine 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 (Carnine 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 (Carnine 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; Carnine 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-Vollrath 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 personnel 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 Foegen 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. Foegen 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 Zigmond 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 Zigmond 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 sustainability 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.

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