Social Cognitive Factors Impacting on Teachers' Reported Inclusive Behaviours for Children with Intellectual Disabilities

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Author's Declaration

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Abstract

This thesis applied psychological theory to examine teachers' explicit and implicit beliefs towards working with children with intellectual disabilities (ID) in the mainstream classroom. The impact of these beliefs on reported inclusive teaching practices was also examined. One pilot and three larger studies were carried out. The pilot study tested a Theory of Planned Behaviour measure which aimed to assess the impact of social cognitive variables on teachers' reported behaviour. Using the think aloud protocol, the face validity of the measure was confirmed and areas in which the questionnaire was difficult to complete were addressed. The first study then utilised this questionnaire to assess teachers' attitudes, social norms and perceptions of control towards inclusive teaching. Actual teaching practices were reported two weeks later. Results identified self-efficacy as the most important predictor of reported inclusive behaviour. Further, attitudes, perceptions of other staff and control were important in predicting self-efficacy, suggesting a role of the school environment. Study 2 aimed to extend these findings by examining predictors of teacher self-efficacy. Results confirmed the relationship between self-efficacy beliefs and reports of inclusive teaching. School ethos (collective efficacy and perceptions of the school climate) and mastery experiences were found to predict teachers' efficacy beliefs. Study 3 then tested the impact of teachers' automatic beliefs on reported inclusive behaviour using the Motivation and Opportunity as Determinants model. Teachers' implicit attitudes were measured using a version of the Implicit Association Test and a questionnaire was used to assess explicit inclusive attitudes, self-efficacy beliefs and reported inclusive behaviours. Teachers' automatic beliefs towards children with ID did not relate to reported inclusive behaviour. Again, only

self-efficacy beliefs were found to be important to the prediction of reported

inclusive behaviour. Implications for both theory and practice are discussed with

suggestions for professional development and teacher training.

Chapter 1 - Introduction

Inclusive education of children with intellectual disabilities (ID) is intended to maximise their educational experience within the mainstream school setting (Lindsay, 1997, 2003, 2007). Despite this, the inclusive education literature is unclear with regards to whether there are academic and social benefits of including children with ID in a mainstream school setting. Although some studies support the decision to educate learners with ID in this way (Lamport, Grave, & Ward, 2012; Soukup, Wehmeyer, Bashinski, & Bovaird, 2007), others have provided evidence which shows inclusion does not benefit the child (Wendelborg & Kvello, 2010; Wiener & Tardiff, 2004).

These inconsistent findings suggest that the success of inclusion is uncertain and is dependent upon the school environment. While policy mandates inclusion, it is classroom teachers' behaviours that determine its success. As schools become more inclusive, teachers must adjust behaviours to better accommodate children of all abilities. It is therefore important to understand what influences the decision of teachers to act inclusively in their classrooms. Although numerous studies have examined teachers' beliefs towards inclusion (Avramidis, Bayliss, & Burden, 2000; Avramidis & Kalyva, 2007; Avramidis & Norwich, 2002; Chiner & Cardona, 2013; De Boer, Pijl, & Minnaert, 2011; Rakap & Kaczmarek, 2010), fewer have considered how these beliefs translate into teaching practices. Examining the relationships between teacher beliefs and subsequent reported inclusive behaviour could provide insight into the socio-cognitive processes involved in the decision to act inclusively and would have practical implications for intervention.

The aim of this thesis was therefore to implement psychological theory to investigate teachers' explicit and implicit beliefs towards working with children with ID in the mainstream classroom. The impact of these beliefs on reported inclusive teaching practices was also examined. The thesis starts with a review of the literature. Chapter 2 discusses the introduction of mainstream schooling for children with ID. The curriculum and instructional adaptations required to enhance the child's learning are acknowledged as these highlight the importance of the teacher in successful inclusion. Teacher beliefs and personality traits which may impact the decision to act inclusively are then discussed and the need to implement psychological theory to understand the relationship between these is recognised.

Chapter 3 discusses the importance of theory in the prediction of behaviour and in particular, social cognition theories as these provide an explanation for the relationship between beliefs and behaviour. It is argued that the Theory of Planned Behaviour (TPB; Ajzen, 1991) is a useful theory to aid the understanding of the relationship between teachers' inclusive beliefs, personality and behaviour. The development of this theory, its strengths and weaknesses and how it stands against competing social cognitive models and theories are discussed. The chapter argues that implementing TPB in the way recommended by Ajzen could provide insight into teacher variables which are important to successful inclusion. It is also acknowledged that a rigorous test of this theory has not been conducted in an educational setting and thus such an examination would provide a novel test of a major theory.

Chapter 4 describes the pilot study which used the 'think aloud' protocol to examine the acceptability of a TPB measure developed to assess teachers' inclusive

beliefs and reported behaviours in mainstream classrooms as part of a larger study. This aimed to solve any unforeseeable problems with the measure and to gain feedback from a sample of the population the questionnaire targets. The results confirmed the face validity of measure and areas in which the questionnaire was difficult to complete were addressed. This measure was then implemented in a larger study which is discussed in Chapter 5.

Chapter 5 examines the predictive strength of the two-component TPB in the relation between teachers' attitudes, social norms, perceptions of control and personality towards inclusive teaching and how these relate to reported teaching practices. Results showed that instrumental attitude, descriptive norm, self-efficacy and neuroticism were the only significant predictors of teachers' intentions to work inclusively. The only significant predictor of teachers' reported inclusive behaviour was, however, self-efficacy. The chapter then tested which TPB variables predicted teacher self-efficacy as this was found to be the most important predictor of behaviour and such an examination may bring us closer to understanding how to enhance teacher efficacy. Results showed that instrumental attitudes, perceptions of other staff and control were important in predicting self-efficacy, suggesting a role of the school environment in the formation of efficacy beliefs.

Study 2 is presented in Chapter 6. This aimed to extend Study 1 findings by examining predictors of teacher efficacy in more depth. The study therefore assessed relationships between teachers' mastery experiences, perceptions of school ethos, self-efficacy and reported inclusive teaching practices. Results confirmed the relationship between self-efficacy beliefs and reports of inclusive teaching. School ethos (collective efficacy and school climate) and mastery experiences were

predictive of teachers' self-efficacy beliefs. Such findings are important given that school climate perceptions are malleable and thus may serve as a target for intervention. Study 2 therefore brings us closer to understanding how inclusive efficacy beliefs may be fostered and therefore changed.

Given that Study 1 found no relationship between teachers' intentions and reported behaviour, teachers may not use an effortful thought process as depicted by TPB when determining their inclusive behaviours. To investigate this, Study 3 tested the impact of teachers' automatic beliefs on reported inclusive behaviour using the Motivation and Opportunity as Determinants (MODE) model (Fazio, 1990). This Study is presented in Chapter 7. The study showed that teachers' automatic beliefs towards children with ID did not relate to reported inclusive behaviour. Again, only self-efficacy beliefs were found to be important to the prediction of reported inclusive behaviour supporting the findings of Study 1 and 2 and suggesting that teachers consider their perceived ability to work with children with ID rather than performing behaviours based on automatic beliefs.

Chapter 8 presents a general discussion of the three studies. In particular, the chapter discusses the importance of teachers' self-efficacy beliefs, the key predictors of self-efficacy and automaticity of teacher behaviour. The chapter discusses both the theoretical and practical implications of these findings. The theories implemented in this research are most commonly used in the prediction of social and health behaviours. This has implications for theory development in terms of assessing the applicability of these to a new setting. The findings also have implications for practice in that the importance of teachers' self-efficacy beliefs in the use of inclusive strategies was identified and contributed to the understanding of how these

beliefs are fostered. School climate impacts on teachers' beliefs and self-perceptions.

Teachers' perceptions and beliefs in turn impact on inclusive practices.

Implementing inclusivity is therefore a social cognitive process.

Chapter 2 – The Role of the Teacher in the Successful Inclusion of Children with Intellectual Disabilities in Mainstream Schools

This chapter discusses the inclusion of children with intellectual disabilities in mainstream schools and examines the classroom adaptations which are required to accommodate the learning difficulties of children with this disability. It illustrates the important role of the classroom teacher in successful inclusion. The chapter then examines teacher factors which impact the use of such adaptations and thus the role of cognition and personality in teachers' willingness to include children with ID are discussed.

2.1 The Introduction of Inclusion in Mainstream Schools

As long as 50 years ago, questions were raised as to whether it should be the right of all children to be educated within their neighbourhood school, regardless of ability. Advocates of inclusive education argued that children with disabilities should not be educated in segregated special schools but included in mainstream classrooms (Deno, 1970, 1985; Dunn, 1968; Johnson, 1962; Kirk & Bateman, 1962).

Inclusion is "a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education" (UNESCO, 2005, p. 13). It is therefore a broad vision which aims to increase the acceptance and participation of all children with mainstream education (Farrell, 2000; Lindsay, 1997, 2003, 2007). Inclusion is not just an approach to educate children with disabilities within mainstream schools but is instead a reform to support the diversity of learners (UNESCO, 2001).

Inclusive schools acknowledge that all children have the right to, and will benefit from, a meaningful and challenging curriculum (Nind & Wearmouth, 2006). Every child should be viewed as a valued member of the school community and educated in a way which is appropriate for that individual (Artiles, Kozleski, Dorn, & Christensen, 2006; Booth, Ainscow, Black-Hawkins, Vaughn, & Shaw, 2000). Schools are therefore required to make adaptations to accommodate every child while promoting access or presence of all students, increasing staff and pupils' acceptance of others and enhancing every child's participation in activities. It should be noted, however, that children with severe disabilities are often still educated within segregated schools (Fuchs & Fuchs, 1994; Kurth, Morningstar, & Kozleski, 2014; McLeskey, Landers, Williamson, & Hoppey, 2012; Sailor, 2014).

2.1.1 Policies and legislation. Educational legislations which mandate inclusion are now in effect in Scotland (Education (Scotland) Act, 1980; The Disability Discrimination Act, 1995; Scotland's School Act, 2000; Education (Disability Strategies and Pupils' Educational Records) (Scotland) Act, 2002; The Education (Additional Support for Learning) (Scotland) Act, 2004). This is reflected in the establishment of the Curriculum for Excellence, the current curriculum followed by Scottish schools. This states that social and educational inclusion is central; all children should be allowed to develop their capacity to be successful learners (Scottish Executive, 2006). Legislation to establish successful inclusion has also been made in the rest of the UK (The Education Act, 1944; The Green Paper, Excellence for All Children, 1997; Special Educational Needs and Disability Act, 2001; Disability Discrimination Act, 2005) and internationally (United Nations Convention on the Rights of the Child. 1989, 2006; UNESCO Salamanca Statement,

1994; No Child Left Behind Act, 2001; Convention on the Rights of Persons with Disabilities, 2006, 2014).

As a result, the prevalence of children attending mainstream schools who experience a disability is increasing. The Scottish Government Pupil Census Report (2013) stated that in 2007, 14330 children who experience a disability were present in Scottish mainstream primary classes. In 2014, however, this number increased to 71756. Such an increase has been reported throughout the rest of the United Kingdom (Emerson et al., 2011) and internationally (National Center for Education Statistics, 2013).

2.2 The Effect of Inclusion on the Child's Learning.

Before considering the impact mainstream schooling has on the education of children with disabilities, it is important to consider the nature of the disability. Examining inclusion of children with physical, behavioural and intellectual disabilities within a school may be problematic in that the findings may be too broad to generalise. Given that each disability is associated with different difficulties, there is a need to examine these separately. Children with intellectual disabilities may be of particular importance when evaluating inclusion due to difficulties in learning and development. Indeed, children with intellectual disabilities are viewed by teachers as problematic to teach in mainstream classes (Alghazo & Naggar Gaad, 2004; Englebrecht, Oswald, Swart, & Eloff, 2003). This therefore, is the focus of this thesis; the inclusion of children who have an intellectual disability (ID). Using both national and international classification systems, the term ID relates to children who find it difficult to learn, understand new or complex information, communicate with

others and cope independently (APA, 2013; British Psychological Society, 2000; Mencap, 2014; World Health Organisation, 2001).

2.2.1 Impact of ID on learning. Although learners with ID are a heterogeneous group with different strengths and learning needs (Guralnick, 2005; Vianello & Lanfranchi, 2011), most are likely to think and learn at a slower rate than typically developing peers, or may have difficulty adapting to new situations (Bauer, 1979; Geary, Hamson, & Hoard, 2000; Wehmeyer et al., 2008).

The child may also experience problems with memory such as the rehearsal and storage of information (Pickering & Gathercole, 2004; Schuchardt, Gebhardt, & Mäehler, 2010; Van der Molen, Van Luit, Jongmans, & Van der Molen, 2007; Vicari, Carlesimo, & Caltagirone, 1995). It is therefore important that the teacher repeats information or instructions to help the child store this in memory. Meese (2001) also noted that the child may not be able to generalise what they have learned from one situation to another. Teachers must consider ways to address this. For example, teaching the child the same skill/information in more than one context and then challenging the student to decide what skill or information is then needed in another context to solve the problem. Children with ID may also struggle with language development and are likely to be behind the typical milestones (Graham & Harris, 2003) but many will become successful in communication and writing (Kahn-Freedman, 2001; Pershey & Glibert, 2002).

2.2.2 Inclusion and academic performance. Standards of ability and development are higher in mainstream schools (Schwartz Green & Casale-Giannola, 2011). Although this means the child is encouraged to reach such standards and is

given the opportunity to become an independent learner, this may also deny the child the support they require. It therefore becomes important to consider the effects of mainstream schooling on the child's academic achievement in order to determine if inclusion serves its purpose.

There is evidence that inclusion may increase the child's academic performance and ambitions (Cooney, Jahoda, Gumley, & Knott, 2006; Cosier, Causton-Theoharis, & Theoharis, 2013; Freeman & Alkin, 2000; Rea, McLaughlin, & Walther-Thomas, 2002; Turner, Alborz, & Gayle, 2008; Dessemontet, Bless, & Morin, 2012). Further, those educated within a mainstream setting are more likely to be working on age-appropriate tasks in line with the curriculum than those in segregated schools (Soukup, Wehmeyer, Bashinski, & Bovaird, 2007; Wehmeyer, Lattin, Lapp-Rincker, & Agran, 2003). These studies tend to demonstrate that although not all academic abilities will improve, children in mainstream schooling develop stronger literacy skills than those attending a segregated school. Literacy skills may be enhanced because the mainstream environment is rich in language and communication. On the other hand, in a review of 1300 special education studies, Lindsay (2007) did not find clear support of the positive effects of inclusion. He argued that there was a lack of evidence to draw firm conclusions regarding the effectiveness of inclusion on academic achievement. While this does not suggest inclusion is detrimental, it neither provides overwhelming evidence of its success.

There are a number of issues with studies assessing the impact of mainstream education on the learning of children with ID. Measure of ability is often reported by parents or teachers of the child meaning ratings may be over or under estimated. Further, given the heterogeneity of ID, it is difficult to find an accurate comparison

group (Henry & Winfield, 2010; Lindsay, 1991; Woolfson, 2011). If the children who are matched from mainstream and segregated settings differ on any characteristics of ID such as memory, attention, interaction or IQ, then this is not a true comparison. Moreover, failing to specify which areas of the curriculum, teaching practices or school environment are different in mainstream education from segregated provision is another common limitation of such studies (Woolfson, 2011). As a result, it remains unclear whether mainstream education more efficient.

2.2.3 Inclusion and social development. Beyond academic ability, the development of social skills is of great importance and mainstream education may enhance such skills in children with ID (Lamport, Grave, & Ward, 2012). Research has examined the effectiveness of mainstream education in increasing the child's level of social competence and relationships.

Social competence. Evidence suggests that those educated in inclusive programs are more socially competent and capable of managing their behaviour in social situations than those in segregated settings (Cole & Meyer, 1991; Fisher & Meyer, 2002; Szumski & Karwowski, 2014). Despite this, others have challenged this arguing that social skills are not influenced by the type of education the child receives (Wendelborg & Kvello, 2010; Wiener & Tardiff, 2004). It should be noted though that these findings are limited in that comparisons with children who attended a segregated school were not made. Where such comparisons are made, findings are equivocal (Hardiman, Guerin, & Fitzsimons, 2009). Woolfson (2011) concluded that few studies conclusively show the benefits of inclusion to the child's social skills. The effectiveness of mainstream education for the development of social competence is therefore unclear.

Social relationships. Peer relations within the classroom and playground influence the success of inclusion (Novo-Corti, 2010; Wendelborg & Tøssebro, 2011) and if students without disabilities do not accept their peers with ID, the benefits of inclusion are lost. Again however, equivocal findings exist to support this claim. Some report increased social interactions and friendships with peers as result of inclusion (Fryxell & Kennedy, 1995; Hall & McGregor, 2000; Salend & Duhaney, 2007) whereas others argue that children with ID experience few social interactions and friendships (Freeman & Alkin, 2000; Kemp & Carter, 2002; Koster, Pijl, Nakken, & Van Houten, 2010; Nakken & Pijl, 2002). Nowicki, Brown and Stepien (2014) reported that the perception of differences between children with and without ID drove social exclusion. This included differences in physical characteristics, behaviours, abilities and time allocation. Such findings suggest that if education about the similarities between children regardless of disability was provided, social relationships may improve. When a teacher responds to a child with a disability in a way which suggests the student is different, the typically developing children react by also treating the child differently (Bunch & Valeo, 2004; Ford, 2013). In contrast, if the teacher is accepting, the other students are also more likely to accept the child.

The ambiguous findings with regards to the effectiveness of inclusion suggest variability among schools and perhaps even classrooms. This again, points to the role of the environment in the successful inclusion of children with ID. Examining the impact of inclusion on learning may have limited practical implications in that to understand why inclusion is successful, either academically or socially, one must understand what classroom processes the teacher is implementing.

The adaptations teachers make for students with ID determine the success of inclusion.

2.3 Implementing Inclusion Using Teaching Adaptations.

As schools become more inclusive, teachers' roles are increasingly diversified. Teachers must adjust their practices to accommodate children of all abilities. Curricular, resource and instructional adaptations are required to meet the needs of the child (Idol, 1997; Janney & Snell, 2004; Nolet & McLaughlin, 2000; Schumm & Vaughn, 1991). As a result of the implementation of these classroom adaptations, some teachers are more effective than others at including children with ID (Becker & Luthar, 2002).

2.3.1 Curricular, resource and instructional adaptations. Curricular adaptations are defined as modifications to the educational components in a curriculum which can increase the learner's performance or enable them to participate in activities (King-Sears, 2001; Rose, Meyer, & Hitchcock, 2005). The content being taught is therefore modified. This includes modifying the learning outcomes or marking criteria. Resource adaptations relate to altering the material or resources used (Comfort, 1990; Reisberg, 1990; Soukup et al., 2007). In contrast, instructional adaptations refer to altering how the content is taught (Janney & Snell, 2004). This can involve grouping students of different abilities together, using alternative strategies to present the material, altering the pace of learning or modifying the way instructions are delivered to the learner (Deschenes, Ebeling, & Sprague, 1994; Kurth, Lyon, & Shogren, 2015). Curricular, resource and instructional adaptations change the complexity, format and amount of information taught.

Do teachers make these adaptations for children with ID? Teachers recognise what is required to make these adaptations and commonly acknowledge the importance of modifying the curriculum, adjusting regular resources and changing instruction (Kurth & Keegan, 2012; Graham et al., 2008; McLeskey & Waldron, 2002; Schumm & Vaughn, 1991). Despite this awareness, evidence of teachers' implementation of these adjustments has been mixed. Early work in the '90s showed that curricular adaptations were not carried out by teachers (Bacon & Schultz, 1991; Schumm & Vaughn, 1991, 1992; Scott, Vitale, & Maten, 1998; Zigmond & Baker, 1995). Adaptations were often used invariably across the entire class with modifications requiring less time or having little impact on usual teaching practices reported most frequently by teachers. Further, teachers found it difficult to provide individualised instructional adaptations for the child with ID.

Over 10 years later, evidence of teachers' use of such adaptations is still mixed (Destefano, Shriner, & Llody, 2001; Graham et al., 2008; Kurth & Keegan, 2012; Kurth et al., 2015; Kuyini & Desai, 2008; McDonnell, 2011; Roy, Guay, & Valois, 2013; Yuen, Westwood, & Wong, 2005). Although teachers reported making routine adaptations such as changing their expectations and using different groupwork strategies, they did not report making individualised instructional adaptations and rejected the principle that special educational practices should be replicated in mainstream schools. These findings are problematic given that successful inclusion requires teachers to make these adaptations and there is reluctance to do this.

It therefore becomes important to consider what factors influence teachers' decision to make classroom adaptations for children with ID. Evidence suggests that

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teacher variables such as gender (Alghazo & Naggar Gaad, 2004; Avaramidis & Norwich, 2002; Rakap & Kaczmarek, 2010; Werner, 2012; Werner & Grayzman, 2011), teaching experience (Avramidis et al., 2000; Glaubman & Lifshitz, 2001; Parasuram, 2006 Soodak, Podell, & Lehman, 1998; Varcoe & Boyle, 2014), training (Alhassan, 2012; Avramidis & Kayyva, 2007, Englebrecht et al., 2003; Hsien, Borwn, & Bortoli, 2009; Varcoe & Boyle, 2014), lack of resources (Arbeiter & Hartley, 2002; Avarmidis et al., 2000; Englebrecht et al., 2003); and age of children taught (Rakap & Kaczmarek, 2010; Ross-Hill, 2009) influence teachers' inclusive behaviours. Although these are important factors, there is little scope for these to change in order to enhance the use of classroom adaptations. Examining factors which may be malleable such as beliefs internal to the teacher has more practical implications. If a relationship exists between teacher beliefs and behaviour, this provides a means by which behaviour could be improved; by changing the underlying belief. Beliefs are important in a person's response to the environment (Fishbein & Ajzen, 2010; Fiske & Taylor, 2013) suggesting that teachers' cognitions may indeed play a role in their use of adaptations in order to accommodate the child.

2.4 Teacher Beliefs and the Use of Curricular and Instructional Adaptations

      2.4.1 Teacher attitudes. Fishbein and Ajzen (2010) define attitude as 'a latent disposition or tendency to respond with some degree of favourableness or unfavourableness to a psychological object' (pp.76). An attitude is therefore the individual's overall evaluation of the behaviour and can influence whether or not the behaviour is performed (Ajzen & Fishbein, 2005). Indeed, evidence suggests that teacher attitudes towards inclusion influence the use of teaching practices, individualised instruction, teacher-parent collaboration and the overall classroom

environment (Elliot, 2008; Monsen, Ewing, & Kwoka, 2014; Ross-Hill, 2009; Ryan, 2009; Sharma & Sokal, 2015; Strogilos & Stefanidis, 2015).

Teachers' attitudes are influenced by the nature of the disability. Studies report more positive attitudes towards including children with physical disabilities than those with intellectual disabilities (Alghazo & Naggar Gaad, 2004; Rakap & Kaczmarek, 2010), possibly as a result of the different classroom adaptations which must be in place to accommodate different learner needs. As discussed in Section 2.3.1, adaptations requiring less time or do not impact usual teaching practices are more commonly used, however, children with ID require substantial changes to the curriculum and instruction (Friend & Bursack, 2005). This can be challenging for the teacher.

Several studies have reported teachers to have positive attitudes towards children with ID (Avramidis & Kalyva, 2007; Gal, Schreur, & Engel-Yeger, 2010; Ojok & Wormnæs, 2013; Westwood & Graham, 2003), viewing inclusion as advantageous and enjoyable. On the other hand, others report attitudes to be neutral (De Boer et al., 2011; De Boer, Pijl, Post, & Minnaert, 2012; Memisevic & Hodzic, 2011; Savolainen, Engelbrecht, Nel, & Malinen, 2012) or negative (Alquraini, 2012; Brackenreed, 2008; Chiner & Cardona, 2013; Rakap & Kacmarek, 2010; Hwang & Evans, 2011). This variability has made it difficult to draw strong conclusions regarding the nature of teacher attitudes towards inclusion. Evidence is not vastly in support of teachers' positive attitudes towards inclusion.

When asked about their own inclusive teaching practices, rather than beliefs towards inclusion in general, teachers view inclusion less favourably (Avramidis &

Norwich, 2002; Scruggs & Mastropieri, 1996). Moreover, teachers found to be positive toward inclusion generally were also less positive with regards to how easy they thought it was to accommodate for children with ID (Avramidis & Kalyva, 2007). Teaching children with ID increases the complexity of an already difficult and demanding job (Loreman, Deppeler, & Harvey, 2005). Thus even when attitudes are positive, beliefs relating to the ease or difficulty of inclusive teaching adaptations may be important. This suggests a need to examine other beliefs in addition to attitudes to inclusion. For example, given that self-efficacy refers to how able an individual perceives they are to cope with a particular situation, this may be an important teacher variable.

2.4.2 Teacher efficacy. Originating from Bandura's Social Cognitive Theory, self-efficacy is a future-oriented belief relating to the individual's confidence and perceived ability to perform a given behaviour (Bandura, 1992, 1993, 1994, 1997). That is, how competent the individual feels they are with regards to performing a particular behaviour. Bandura further argued that efficacy beliefs influence the way in which people behave, think and feel. Those with a strong sense of self-efficacy will show a sense of commitment towards mastering challenging tasks whereas those with little self-efficacy will avoid such tasks.

As such, teacher self-efficacy relates to the perceived ability to provide academic instruction and create a positive learning environment. Efficacy beliefs can impact the goals teachers set, time spent planning and willingness to experiment with teaching methods (Gibson & Dembo, 1984; Klassen, Tze, Betts, & Gordon, 2011; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Zee & Koomen, 2016). Further,

efficacy beliefs impact teachers' persistence when faced with challenges or when a particular teaching method is not successful.

Evidence suggests that teacher self-efficacy plays a key role in the success of inclusion (Brady & Woolfson, 2008; Hofman & Kilimo, 2014; Leyser, 2002; Soodak & Podell, 1994; Sharma, Loreman, & Forlin, 2012; Vaz et al., 2015; Woolfson & Brady, 2009). Teachers' perceived ability to successfully teach children with ID influences the likelihood that they will implement curricular and instructional adaptations. Those who report higher feelings of efficacy are more likely to work successfully with children who struggle to learn. In contrast, those with lower self-efficacy will more often use strategies which were detrimental to the child's learning (Gibson & Dembo, 1984; Schumm & Vaughn, 1995). In addition to teacher attitudes towards implementing inclusive strategies for children with ID, it is therefore important to consider efficacy beliefs.

2.4.3 Teachers' perception of control. Self-efficacy relates to teachers' beliefs regarding internal factors which may influence their teaching practices (i.e. confidence and ability). Research has also highlighted the importance of environmental variables such as level of available support, training, time and class load (Agran, Alper, & Wehmeyer, 2002; Avaramidis et al., 2000; Avaramidis & Norwich, 2002; Gibson & Dembo, 1984). These factors may influence teachers' feelings of control which can impact the decision to act inclusively. Although in Section 2.3.1 it was argued that these factors may not be malleable, the influence these factors have on teachers' perceptions of control perhaps is. Positive attitudes may be overlooked as a result of consideration of practical issues that make inclusion difficult (Croll & Moses, 2000; Frederickson, Dunsmuir, Lang, & Monsen, 2004).

Thus it is important to understand the impact of teachers' feelings of control when working with children with ID.

    2.4.4 Teachers' perceptions of others' beliefs. Teachers work collectively within an interactive school system rather than isolated individuals with no support or contact with each other. This means that important others involved in the school community (e.g. head teacher, other class teachers, and children's parents) may influence a teacher's willingness to make adaptations for the child. This introduces another important teacher cognition; social norms. Social norms relate to the teacher's belief about what others think about inclusion and if he or she perceives other staff use appropriate adaptations for children with ID. Social norms offer guidelines as to what behaviours are seen as appropriate by the people who the individual deems important (Fishbein & Ajzen, 2010). For example, evidence suggests that teachers were more accepting of inclusive practices when the head teachers created a school climate that promotes inclusion (Boyle, Topping, & Jindal-Snape, 2013; Chazan, 1994; Hammond, & Ingalls, 2003). Thus if teachers perceive inclusion as the school norm in which curricular and instructional are appropriate, they are then more likely to behave in line with these.

    The above shows the importance of teachers' attitudes, self-efficacy, feelings of control and social norms in the successful inclusion of children with ID. Despite this, such research does not acknowledge individual differences which may have an effect on these beliefs. Personality traits are a fundamental determinant of behaviour (Bermúdez, 1999; Furnham & Heaven, 1999). Conner & Abraham (2001) argued that personality may influence behaviour through variables such as attitudes, self-

efficacy and perceptions of control or social norms. Studies which examine the role of attitudes, self-efficacy, feelings of control and social norms on teachers' behaviour draw conclusions which are thought to generalise across the teaching population. This, however, may not be the case given that differences in personality may influence teacher cognitions.

2.5 The Role of Teacher Personality on Inclusive Behaviours

Personality can impact the way in which the individual thinks as a teacher, organises his or her classroom, responds to the students, deals with problems, how adaptable they are to accommodate children's individual needs and ultimately can be a cause of teacher failure (Curtis & Liying, 2001; Erdle, Murray,& Rushton,1985; Klassen & Tze, 2014; Krueger 1972; Mohanna, Chambers, & Wall, 2007; Polk, 2006; Rushton, Morgan, & Richard, 2007). Further, 50% of the relationship between teacher personality and student ratings of teacher effectiveness has been shown to be mediated by specific classroom behaviours (Erdle et al., 1985). Teacher personality may therefore translate into teaching behaviours and thus may be important to teachers' use of inclusive behaviours.

2.5.1 What is personality? Personality traits are individual differences in the consistency of thought and action (McCrae & Costa, 1990). The dominant view is that there are five broad personality dimensions: neuroticism, extraversion, openness, agreeableness and conscientiousness (Borgatta, 1964; Fiske, 1949; Digman & Takemoto-Chock, 1981; Digman, 1990; John & Naumann, 2010; McCrae & Costa, 1990, 2013; Norman, 1963). This has been termed the 'Big Five' or the 'Five Factor

Model' (FFM) of personality (Costa & McCrae, 1985; Digman, 1990; Goldberg, 1992), although these terms are often used interchangeably.

__The discovery of the Five Factor Model.__ The lexical approach to personality views human interaction at the core of personality and argues that all important traits are depicted in social interaction and language (Goldberg, 1981). Thus taxonomies are not based on a theoretical perspective but instead on analysis of the language people use to describe themselves and others. After decades of research and ambiguity surrounding how to conceptualise personality (Allport & Odbert, 1936; Cattell, 1943, 1945; Eysenck, 1967; Norman, 1967; Allen & Potkay, 1981), it became apparent that one general taxonomy was required to facilitate the accumulation and communication of empirical findings by providing a common language (John, Naumann, & Soto, 2008). A consensus was reached that personality comprises five broad personality factors.

This has been termed the 'Big Five' or the 'Five Factor Model' (FFM) of personality (Costa & McCrae, 1985; Digman, 1990; Goldberg, 1990, 1992) and argues that personality can be understood within five basic dimensions; neuroticism, extraversion, openness, agreeableness and conscientiousness. These are seen as relatively stable patterns of behaviour, cognition and affect (Fleeson, 2001, 2004). The FFM serves to integrate all previous work into one common framework and suggests that these five traits represent personality at the broadest level (John et al., 2008). Costa and McCrae (1985) went on to address lower level traits and argued that each of the Big Five dimensions encompasses six lower level facets. A description of each trait will now be provided.

The traits of the Five Factor Model. Neuroticism concerns the level of emotional stability within the individual and involves the likelihood of experiencing negative emotions such as anxiety, hostility, depression and vulnerability. An individual high on this dimension may experience mood swings and negative emotional states (Judge & Bono, 2000). Extraversion refers to the individual's sociability. A person high on this dimension will be active, assertive and excitement-seeking (Goldberg, 1990, 1992). The next dimension, openness, concerns how open the individual is to new experiences and a willingness to consider new ideas. Individuals high on this will be imaginative and unconventional whereas a person scoring low on this dimension will prefer familiar experiences to new ones (McCrae & John, 1992). Agreeableness concerns factors that are important in social interaction such as trust, modesty, compliance, helpfulness and compassion (McCrae & Costa, 2003). Finally, conscientiousness relates to the amount of self-discipline and control a person exhibits. Individuals high on this will be determined, organised and strive for achievement whereas individuals scoring lower on this will be less careful and easily distracted (John, & Srivastava, 1999). As is clear, the Big Five has provided structure and order to the once endless number of personality traits.

The FFM has emerged as the leading framework for investigating personality and has been described as the most examined and empirically supported model in personality research (Judge & Bono, 2000; McCrae & Costa, 2003; McCrae & Costa, 2012; Salgado, 2002). Each trait within the model may have implications for predicting behaviour.

2.5.2 FFM traits and behaviour. The above provides evidence to suggest that personality traits may have implications which relate to teachers' behaviour in the classroom. Despite this, few studies have empirically examined the impact of teachers' personality on inclusive behaviours. Todorovic, Stojilijkovic, Ristanic and Dijigic (2011) were among the first to examine the relation between teachers' attitudes toward inclusion and personality traits using the FFM. Results showed that only openness was significantly correlated with positive attitudes towards inclusion. The authors argued that as such individuals are willing to accept new ideas and are flexible, they have the most positive influence on the child. Although it was hypothesised that a positive relationship would exist between attitudes and conscientiousness, this was not found. Given that individuals high on this dimension are self-disciplined, competent and achievement striving, they may be more rigid regarding inclusion if they do not have enough information and resources. This would suggest the need to provide more training for individuals high on this dimension.

A point to note is that this stands in contrast to the findings of Pittman (1985) who argued that conscientiousness positively influences teacher behaviours. Although this suggests ambiguity regarding the personality traits important for teachers' inclusive behaviour, there are notable limitations of Todorovic et al's study. The authors measured attitudes only meaning that they did not assess other important beliefs such as perceptions of social norms, control or self-efficacy. Different personality traits may influence different cognitions. This introduces the need to understand the relationship between beliefs, personality and behaviour within one theoretical framework.

2.6 Summary

This chapter discussed the introduction of mainstream schooling for children with ID. The learning difficulties experienced by children with the disability were discussed in order to demonstrate the curriculum and instructional adaptations which are required to enhance the child's learning. This indicated a role of the environment in successful inclusion and therefore the importance of the teacher in providing that environment. The chapter then examined teacher beliefs which may impact the decision to act inclusively. Attitudes, self-efficacy, social pressure and feelings of control were identified as important in teachers' use of adaptations for children with ID. It was also acknowledged that personality traits may impact these cognitions thus suggesting the importance of individual differences. There is a need to investigate the relationship between teacher cognitions, personality and inclusive behaviours. This may be achieved by implementing a theoretical framework which can explain the relationship between teacher cognitions, personality and behaviour.

Chapter 3 - Theory of Planned Behaviour as a Theoretical Framework for Understanding Teachers' Reported Inclusive Behaviours.

Social cognition theories that link beliefs and behaviour are examined in this chapter. It is argued that the Theory of Planned Behaviour is particularly useful for application to an educational setting to aid the understanding of teachers' inclusive behaviours. The chapter examines the development of this theory, considers its strengths and weaknesses to determine what makes it more successful than its competitors. Previous applications of the theory are discussed with a focus on research examining teacher behaviours. This aims to demonstrate the usefulness of the Theory of Planned Behaviour in understanding inclusive teaching practices.

3.1 The Role of Theory in the Prediction of Behaviour

Theory has been described as "a set of interrelated concepts, constructs, and propositions that present a systematic view of a domain of study for the purpose of explaining and predicting phenomena" (Coreil, 2008, pp. 69). A theory should therefore offer a set of variables which are important in the prediction of a behaviour, event or situation and provide an explanation as to how these variables are related or interact (Glanz & Bishop, 2010). This can then be used to understand why individuals do or do not engage in a particular behaviour as well as providing scope for ways to change the behaviour.

It is important not to confuse this with the term 'model' which is also often used to explain behaviour. Although models shares some features of theories there are important differences. 'Model' is often used to refer to a theory which is too simplistic to be given the formal status of a 'theory' (Bem & de Jong, 2006;

Graziano & Raulin, 2000). In contrast to a theory, a model organises components of a certain phenomenon to indicate relationships between these often relating to a process that is less certain or complete than a theory (Coreil, 2008). A model can, however, be used to aid the construction of a more sophisticated theory (Morgan & Morrison, 1999). Further, theories commonly comprise broad classes of phenomena whereas models are often applied to more specific, narrow domains and are less generalisable; generalizability is a key characteristic of a successful theory.

    3.1.1 Social cognition models and theories. Social cognition relates to mechanisms by which individuals make sense of social situations. It views the individual's thoughts as important in his or her response to the environment (Fiske & Taylor, 2013). Most deal with cognitions which influence motivation and suggest evaluating the costs and benefits of performing the behaviour in order to determine if the behaviour is likely to be performed (Conner, 2010).Thus social cognition models and theories identify thoughts and beliefs which distinguish those performing from those not performing behaviours.

    One of the most successful and commonly used theories in the understanding of human behaviour is the Theory of Planned Behaviour (TPB; Ajzen, 1991) with the number of TPB citations in 2010 reaching a figure of 4550 (Ajzen, 2011). The success of TPB is credited to its well defined components and logical hypothesised paths linking these (Schwarzer, 2014). As argued by Glanz and Bishop (2010), a theory must provide not only a set of variables but also an explanation as to how these relate to each other.

The TPB has emerged as the most influential social cognition theory (Armitage & Christian, 2004; Armitage & Conner, 2001; Paylou, & Fygenson, 2006). Although TPB is frequently applied to the prediction of health behaviours, it benefits from broad model components that can be generalised to other areas, another feature of a successful theory (Coreil, 2008). As such, TPB may provide insight into teacher beliefs and behaviour.

Completing social cognition theories. It should be acknowledged that other social cognition theories and models exist with conflicting positions with regards to the cognitions that influence behaviour and the mechanisms by which this is achieved. These include the Health Belief Model (Becker, 1974; Rosenstock, 1966), the Protection Motivation Theory (Rogers, 1975; Maddux & Rogers, 1983) which is an extension of the HBM, the Transtheoretical Model (TTM: Prochaska & DiClemente, 1983) and Social Cognitive Theory (SCT: Bandura, 1977). The set of variables and the combination by which these are thought to influence behaviour vary between each, however, some constructs overlap. For example, all of the aforementioned models and theories include a measure of self-efficacy or perceived control. This brings about the need to consider why TPB is a more appropriate theory despite the limitations discussed above.

These theories mentioned above suffer from a number of issues which are perhaps more problematic than the limitations of TPB. First, the Health Belief Model (HBM) has been criticised for comprising components which are not clearly specified meaning few studies test all components of the model (Armitage & Conner, 2000). It is common for HBM research to disregard one of the model's key components; 'cues to action' which assesses a person's readiness to act (Zimmerman

& Vernberg, 1994). This is a result of the component being vaguely defined and difficult to operationalise. A meta-analysis showed that HBM components were only weakly related to behaviour (Harrison, Mullen, & Green, 1992). HBM is essentially a list of variables which are important for health behaviours rather than a theory which outlines relationships between variables in the prediction of behaviour. In a critical comparative meta-analysis of over 60 studies comparing the predictive power of both HBM and TPB, Zimmerman and Vernberg (1994) reported that TPB was a substantially better predictor of behaviour than was HBM. This suggests that more sophisticated theory is required in the understanding of behaviour.

It is at this point relevant to recall Morgan and Morrison's (1999) argument that a model can inform the construction of a more sophisticated theory (Morgan & Morrison, 1999). Protection Motivation Theory (PMT) was therefore established to extend HBM to include appraisal processes which are associated with coping with stress. Components such as self-efficacy and protection motivation were incorporated into the theory. Although meta-analytic reviews have shown these components to be strong predictors of behaviour (Floyd, Prentice-Dunn, & Rogers, 2000; Milne, Sheeran, & Orbell, 2000), there are still limitations of this theory.

The lack of clarity with regards to measuring each of the PMT components results in inconsistent measures between studies. No guidelines exist which instruct researchers on how to appropriately measure PMT. It therefore becomes difficult to compare findings across studies. Further, it is common for single item measures to be used to assess each component which leads to low predictive power (Gliem & Gliem, 2003; McIver & Carmines, 1981; Nunnally & Bernstein, 1994). Neither the HBM nor the PMT provide a complete explanation of the relation between beliefs

and behaviour. Moreover, both are health-specific meaning that they may not be generalisable outwith this setting. Indeed, neither include variables representing non-health related causes involved in behaviour, for example, social acceptability (Ajzen, 1988). This relates back to Coreil's (2008) argument that a useful theory should comprise broad components in order for it to be generalisable.

The Transtheoretical Model (TTM) also suffers from a number of issues such as ambiguity with regards to the number of stages involved in the model. This has resulted in the model falling out of favour (Abraham, 2014). Similar to the HBM and PMT, heterogeneity in its application exists with no uniform way to measure the components (Brug et al., 2005). In reviews on TTM literature, it has been noted that thirteen different versions of the model have been implemented (Spencer, Adams, Malone, Roy, & Yost, 2006; Spencer, Pagell, Hallion, & Adams, 2002). Such findings result from disagreement with regards to the number of behaviour change stages in the model with some employing ten and others opting to use only five or six. This raises issues of validity and reliability, how and why it is possible to modify the number of stages and how best to compare studies using different versions of the model. A further limitation relates to the issue of research utilising the TTM to measure outcomes such as knowledge rather than behaviour (Whitelaw, Baldwin, Bunton, & Flynn, 2000). This results in a lack of supportive evidence that the predictors advocated by TTM are indeed related to behaviour. The limitations of HBM, PMT and TTM question whether these were ever intended to predict behaviour or rather, to simply offer a set of components which are important.

Social Cognitive Theory (SCT) has also been criticised for ambiguity regarding the relations between the different components of the theory; it is loosely

structured (Prochaska, 2006). Note that a theory should specify the relation between variables (Coreil, 2008) which SCT fails to do. Further, items which aim to measure self-efficacy are often similar to items measuring behaviour which can lead to a bias in measurement of the theory. The components are therefore not clearly defined which can lead to inconsistent measurement of the theory. Finally, with regards to interventions, the theory is useful in changing behaviour only in those who want to change the behaviour thus fails to target the individuals who do not intend to change their behaviour. The usability of the theory is therefore limited to a certain group of individuals.

In sum, a major issue with these theories relates to equivocal theory components. This makes it difficult to accurately test the theory and thus predict behaviour. At best, these theories provide insight into variables which may influence behaviour. In a systematic review of studies testing the predictive validity of social cognitive theories, Godin, Bélanger-Gravel, Eccles and Grimshaw (2008) found TPB was the most frequently used theory and was the most effective in predicting behaviour. As such, TPB may provide insight into teacher beliefs and behaviour. The development of this theory, which began with the Theory of Reasoned Action, will now be discussed.

3.2 The Reasoned Action Approach to Understanding Behaviour

Early work examining the processes in which attitudes influence behaviour presented evidence to suggest that behaviour could not be predicted only from explicit attitudes (Wicker, 1969). Instead it was suggested that attitudes were only one of the variables important in understanding behaviour (Ajzen & Fishbein, 1977). This led to the development of the reasoned action approach which argued, in its

simplest form, that behaviour is a result of the individual's beliefs (Fishbein, 2008).

This was represented in the Theory of Reasoned Action (TRA; Fishbein, 1993, 1980;

Fishbein & Ajzen, 1975) which was later extended to the Theory of Planned

Behaviour (TPB; Ajzen, 1991). Both theories aimed to provide a framework to

explain the relationship between explicit attitudes and behaviour.

3.2.1 Theory of reasoned action. TRA argued that performance of the target

behaviour is determined by three major components. The proximal determinant of

behaviour is a person's behavioural intention. Intentions comprise the motivational

factors implicated in behaviour and suggest how willing the individual is to perform

the behaviour (Ajzen, 1991). As a general rule, the stronger the behavioural

intention, the more likely it is that the behaviour will be carried out (Ajzen, 1991).

Intentions are predicted by two components; attitudes and subjective norms. See

Chapter 2, Section 2.4.1 for a definition of attitudes. Subjective norm is the social

pressure the individual feels to perform the behaviour (Rivis & Sheeran, 2003).

Ajzen and Fishbein (1980) argued that if attitudes towards the behaviour are positive

and individuals believe others want them to perform the behaviour, this results in a

stronger behavioural intention. This in turn, will determine performance of the

behaviour.

TRA has frequently been used in the prediction of behavioural intentions and

behaviour. A meta-analysis examining the predictive validity of the theory found that

TRA could predict intentions and behaviour adequately and was useful for

understanding how to change behaviour (Sheppard, Hartwick, & Warshaw, 1988).

While TRA has been successfully implemented to predict numerous behaviours such

as exercising (Godin, 1994), driving while intoxicated (Gastil, 2000) and practising

safe sex (Bosompra, 2001), it is only suitable for understanding volitional behaviours (Eagly & Chaiken, 1993; Sheeran, Traifmow, & Armitage, 2003). TRA cannot predict non-volitional behaviours and is therefore limited to behaviours which are easy or controllable (Conner & Armitage, 1998). Fishbein (1993) found TRA was a poor predictor of behaviours that require skills, opportunities and resources. This relates to teachers in that lack of planning and admin time; collaboration with colleagues; resources or poor working environment may influence how much control a teacher perceives he or she has (Hofman & Kilimo, 2014; Horne & Timmons, 2009). TRA therefore cannot explain behaviours which are not under complete control of the individual.

3.2.2 Theory of planned behaviour. TPB was developed to extend TRA beyond the prediction of volitional behaviours. This was achieved by incorporating perceived behavioural control (PBC) as an additional component of the theory. Ajzen (1991) argued that this reflected the individual's experiences with the target behaviour and obstacles believed to hinder or facilitate his or her performance. PBC is an additional predictor of intentions but can also predict behaviour without the indirect effect of intention. The inclusion of PBC allows for more complex behaviours which require skills, opportunities and resources. With the exception of PBC, TRA and TPB are identical (Ajzen, 1991), however, PBC has been found to explain a substantial portion of the variance in behaviour (Godin & Kok, 1996; Armitage & Conner, 2001).

Research has compared the predictive power of TRA and TPB. Madden, Ellen and Ajzen (1992) assessed the theories on ten behaviours from health and

social settings, such as exercising, talking to a close friend, avoiding caffeine and taking vitamin supplements. Results showed that PBC enhanced the prediction of both intentions and behaviour. Further, the influence of PBC was strongest when there were issues of control involved in the behaviour. Similar findings were recorded for moral behaviour (i.e. illegally coping software; Chang, 1998), condom use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Sheeran & Taylor, 1999) and exercise (Hagger, Chatzisarantis, & Biddle, 2002). This shows that TPB is a stronger predictor than the TRA for a diverse range of behaviours and this is likely to apply to teacher behaviour too, although no comparison studies have been conducted in an educational setting.

3.3 The One-Component TPB

Traditionally, TPB (see Figure 1) is operationalised through the use of items which assess one aspect of attitudes, subjective norms and PBC, known as the one-component theory (Ajzen, 1991). The traditional measure of attitude predominantly focused on instrumental evaluations of behaviour (Eagly & Chaiken, 1993). This reflected perceived positive or negative consequences involved in performing the behaviour (Fishbein & Ajzen, 2010). An example is; "For me, attending the gym five times a week would be beneficial/harmful". Fundamentally, this relates to how advantageous performing the behaviour would be for the individual.

In addition to attitudes though, a person's social environment can influence his or her intentions and actions (Fishbein & Ajzen, 2010). This relates back to the point discussed in Chapter 2, Section 2.4.1 which highlighted the role of social influences on teachers' behaviours. Teachers are more accepting of inclusive practices where their head teachers view inclusion positively (e.g. Boyle et al., 2013;

Chazan, 1994). This notion is captured by the subjective norms construct in the one-component TPB. Subjective norm concerns the perceived social pressure implicated in performing the behaviour or how acceptable the behaviour is seen to be by the individual's social group (Ajzen, 1991). Social norms therefore provide guidelines as to what behaviours are seen as appropriate, or inappropriate (Fishbein & Ajzen, 2010). Thus if teachers perceive inclusion as the school norm and believe inclusive teaching practices are seen as appropriate by others, they are then more likely to behave in line with these.

Note that the term 'subjective' is used as the individual's perception may not reflect what 'important others' actually think about performing the behaviour. Individuals are motivated to comply with norms for several reasons including the social agent being in a position of authority, the perceived reward for complying or punishment for non-compliance, gaining a sense of identification with the social agent or the perceived knowledge of the social agent (Fishbein & Ajzen, 2010). It should be noted that the subjective norm component has received much criticism in that it may be the weakest predictor of intention across a range of behaviours (Armitage & Conner, 2001; Hagger et al., 2002; Kuyini & Desai, 2007; MacFarlane & Woolfson, 2013; Palou & Norwich, 2002; Yan & Sin, 2014).

Finally, the one-component TPB comprises a measure of perceived control. Individuals must have control over the behaviour in order to have the intention to carry it out (Fishbein & Ajzen, 2010). As a measure of actual behavioural control is commonly unavailable, researchers often use PBC as a proxy of actual control (Fishbein & Ajzen, 2010). Thus in order to predict behaviour, TPB states that in addition to attitudes and subjective norms, PBC can have an influence on intentions.

PBC is defined as the degree to which the individual believes they have the ability

and control over performing the behaviour (Fishbein & Ajzen, 2010). This decision

is reached by considering the available skills, resources and opportunities which may

enhance or inhibit performance of the behaviour. A high level of PBC should

increase the individual's intention, effort and perseverance to perform the behaviour

(Ajzen, 2002b). However, this variable can also have a direct influence on the

behaviour, depending on how accurately the individual's perceived control reflects

actual control (Ajzen, 1991).
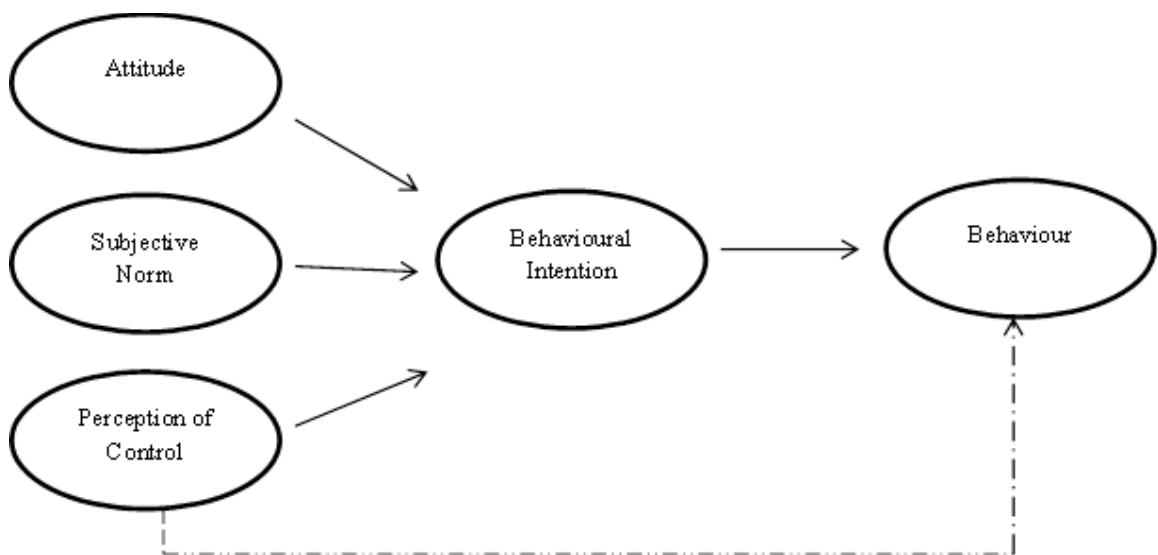
Figure 1. One-Component Theory of Planned Behaviour (Ajzen, 1991)

3.3.1 Application of the one-component TPB. TPB has been successfully

applied in various health settings and has shown to predict, for example, healthy

eating behaviours (Conner, Norman, & Bell, 2002), drug abuse (Bashirian, Hidarnia,

Allahverdipour & Hajjzadeh, 2012) and exercise (Hobbs, Dixon, Johnston, &

Howie, 2013; Norman, Conner & Bell, 2000). The model is also influential within

social psychology where it has been used to understand dangerous driving (Elliott,

Armitage & Baughan, 2007), walking while intoxicated (Gannon, Rosta, Reeye, Hyde, & Lewis, 2014), unethical behaviour (Change, 1998), homelessness (Wright, 1998) and violent behaviour (Tolman, Jeffery & Fendrick, 1996) among many more. TPB investigations have been less frequently used in the education setting, however, some applications include teachers' co-operative learning in science classes (Lumpe, Haney & Czerniak, 1998), teachers' technology usage (Sugar, Crawley & Fine, 2004) and pupils' bullying behaviour in school (Pryce & Frederickson, 2013). Several studies have also utilised TPB specifically in the investigation of teacher attitudes and behaviour towards inclusive education.

3.3.2 Subjective norm and teachers' inclusive behaviour. In a recent study, MacFarlane and Woolfson (2013) examined the relationship between primary teachers' attitudes and reported behaviour towards inclusion of children with social, emotional and behavioural difficulties using TPB. Results showed attitudes and PBC positively predicted behavioural intentions to work with children with behavioural difficulties but subjective norm did not. Instead, subjective norm predicted teachers' self-report inclusive behaviours. This suggests that subjective norm may work differently in a school setting.

Some have reported similar equivocal subjective norm results (Alhassan, 2012; Batsiou, Bebetsos, Panteli, & Antoniou, 2008), while others have found the expected relationship between this component and teachers' inclusive intentions (Ahmmed, Sharma, & Deppeler, 2014; Yan & Sin, 2014). The role of subjective norm in education is, therefore, unclear and poses a challenge to the application of TPB to teachers' reported inclusive behaviours. This component has, however, sometimes been found problematic in the prediction of health behaviours (Armitage

& Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002). Further investigation is needed to shed light on how teachers' perceptions of others influence their classroom behaviour.

A limitation of studies utilising TPB in an education setting (e.g. Ahmmed et al., 2014; Elik, Weiner, & Corkum, 2010; Kuyini & Desai, 2007; MacFarlane & Woolfson, 2013; Stanovich & Jordan, 1998; Yan & Sin, 2014) is that the components were not measured as recommended by Ajzen (2002). Thus the relationships between TPB components cannot directly be compared because of the 'principle of compatibility' rule (Ajzen, 2000). This states that the behaviour should be defined in terms of the action performed, the target at which the action is directed, the context and the time at which it will be performed. These can be defined at any level of generality or specificity but TPB components are only comparable when measured at the same level. For example, if the behaviour of interest is, 'adapting the pace of instruction for a child', all items in the questionnaire should relate to this only. From a theory development perspective, this makes the comparison of results within different settings difficult. Comparing findings would provide insight regarding the usefulness of TPB across disciplines and indicate whether it is generalisable or limited to health and social settings.

There are, however, some studies investigating mainstream teachers' inclusive behaviours that have indeed implemented the one-component TPB exactly as recommended by Ajzen (e.g. Batsiou et al., 2008; Oh, Rizzo, So, Chung, Park & Lei, 2010; Taylor & Yun, 2012; Werner, 2012). Despite this, measurement problems still limit these findings. For example, although Batsiou et al. (2008) reported the importance of attitudes and PBC, the measurement of PBC was limited. The authors

asked questions in relation to knowledge and availability of information regarding

inclusion. This may to an extent influence self-efficacy or controllability as available

information may enhance perceptions of control. The teachers, however, may have

knowledge or information but still experience low levels of confidence or perceived

control to teach in an inclusive classroom. This makes the generalizability of results

problematic. Further, the aim of the paper was primarily to examine difference in

cognitions between teachers in Greece and Cyprus thus the analysis was not

primarily focused on measuring TPB.

Moreover, some investigators opted to measure only to the intentions stage in

the theory meaning they did not examine the complete TPB (Batsiou et al., 2008; Oh

et al., 2010; Werner, 2012; Werner & Grayzman, 2011). Where others have

measured behaviour, this has been assessed at the same time as the other TPB

components (Jeong & Block, 2011; Taylor & Yun, 2012). TPB aims to predict future

behaviour thus it is more appropriate to measure the antecedents of behaviour at one

time point and return at a later time to measure behaviour. This allows analysis to

determine if the components are in fact predicting behaviour. Thus there is a need for

research to carry out a prospective design in order to fully assess the predictive

validity of TPB in an educational setting.

3.3.4 Critique of TPB. Despite its popularity and success, or perhaps as a

result of this, TPB has received considerable criticism. A recent critique by

Sniehotta, Presseau and Araújo-Soares (2014, 2015) sparked a major debate, not

only among health psychologists but also among researchers in other disciplines

whose work involves social cognition theories. It is therefore important to critique

TPB in order to justify why it is the most appropriate theory.

A complete theory of social behaviour. In proposing the TPB, Ajzen (1991)

argued that no other variables directly influence behaviour. Any other variable that

does will do this indirectly through the existing components of the theory. Thus

although the model contains only a small number of components, Ajzen suggested

that the TPB is a complete model of social behaviour. Others have refuted this

suggesting instead that variables such as habit strength (Murtagh, Rowe, Elliott,

McMinn, & Nelson, 2012; Orbell, Blair, Sherlock, & Conner, 2001), anticipated

regret (Abraham, & Sheeran, 2003; Hyde, & White, 2013; Parker, Manstead, &

Stradling, 1995), moral norms (Godin, Conner, & Sheeran, 2005; Manstead, 2000)

and self-identity (Callero, 1985; Conner & Armitage, 1998; Hagger, &

Chatzisarantis, 2006; Rise, Sheeran, & Hukkelberg, 2010) can influence intentions

over and above existing components. Sniehotta et al. (2014) argued that despite such

evidence, Ajzen has refused to include new predictors into the model.

Ajzen (2014), however, has stated that new variables can be added if these

prove to be strong predictors of intention and behaviour over and above the existing

components. He supports this by pointing out that the TPB was developed by adding

perceived control to the original TRA. Further, Fishbein and Ajzen (2010) provided

criteria which should be considered if researchers want to add a fourth variable. It is

stated that the new variable should conform to the principle of compatibility (i.e.

should be measured in line with the existing components). It must also be possible to

regard the new variable as a causal factor in intentions and behaviour. Thirdly, the

new variable should be independent from the existing components. Fourth, the

variable should be applicable to a wide variety of behaviours. Finally, the new

variable should consistently improve the prediction of intentions and behaviour. Thus Fishbein and Ajzen provide a clear and testable argument.

The importance of other variables has therefore not been disregarded although Fishbein and Ajzen (2010) argued these may be problematic. For example, considering the inclusion of self-identity, the measures used to assess this variable appear to overlap with measures of attitudes and normative components thus does not add to the understanding of behaviour. The same was concluded for anticipated regret (Ajzen & Sheikh, 2013). This supports Ajzen's (1991) claim that any other variable only has an effect as a result of existing components. Further, revisiting the issue of generalizability, Conner (2014) noted that the TPB components can be used to predict a wide range of behaviours whereas the additional variables are limited when applied across such a range of behaviours. Again, this supports the contention that additional variables are not required in order for the theory to accurately predict behaviour.

Measurement correspondence. The TPB was also the first social cognition theory to acknowledge the importance of measurement correspondence which argues that the components of the model must be assessed at the same level of specificity (Ajzen, 1991: Fishbein & Ajzen, 1975). As mentioned in Section 3.3.2, this states that the behaviour should be defined in terms of the action performed, the target at which the action is directed, the context it will be performed in and the time at which it will be performed. These can be defined at any level of generality or specificity, however, all components should then be measured in accordance with this (Fishbein & Ajzen, 2010). An important point made by Fishbein and Ajzen (1975) is the 'principle of compatibility' which states that components of the TPB are only

comparable if they are measured at the same level of specificity. This is the problem

with the design of several of the previously discussed education TPB studies. In

2002, Ajzen published detailed guidelines to assist researchers in creating TPB

measures. The TPB has therefore brought about structure to the measurement of

behaviour and its antecedents thus it is easily operationalised.

Predictive validity. When measured in the correct way, behavioural

intentions can account for a substantial amount of the variance in behaviour

(Fishbein & Ajzen, 2010). Despite this, some have argued that the TPB does not

account for enough variance in behaviour (Odgen, 2003; Odgen, 2014; Sniehotta et

al., 2014). In a meta-analysis of 185 studies, Armitage and Conner (2001) found the

TPB accounted for around 27% of the variance in behaviour and 38% of the variance

in intentions. A large portion of the variance is therefore unaccounted for by the

theory.

It should be noted that others have disagreed that TPB lacks predictive

validity. It is argued instead that attitudes and PBC each have large effects on

behavioural intentions. Further, intentions and PBC have medium effects in the

prediction of behaviour, effects that are maintained when controlling for past

behaviour (Conner, 2014). Meta-analytic work has found that TPB explains more

variance in behaviour than any other social cognition theory (Armitage & Conner,

2001; Godin & Kok, 1996). It should also be noted that it has been repeatedly stated

in TPB literature that the importance of each component will vary as a function of

the population and target behaviour (Ajzen, 1991; Ajzen & Fishbein, 1980; Fishbein,

2000). Although it is problematic that the theory cannot account for more variance in

the prediction of behaviour, it can be generalised to examine a wide range of

behaviours (Kok & Ruiter, 2014). This is one of the key reasons why TPB has stimulated a large number of research studies.

Behaviour change interventions. TPB was not initially intended to be a theory of behaviour change but was instead aimed at predicting intentions and behaviour. Despite this, the theory can identify important beliefs suggesting that it may be used as a framework for designing behavioural interventions (Ajzen, 2014). However, Ajzen (2011) stated that "the theory is silent as to how beliefs are changed" (pp 90). Understanding a component or relationship does not specify the process of bringing about change. Further, given that TPB can be used to predict a wide variety of behaviours, there may not be one solution to change all behaviours. It is argued that once important beliefs are identified using standard TPB measures, the researcher must use his or her "experience and creativity" to design the intervention (Ajzen, 2006). It has been argued that lack of clarity or instruction regarding how to change behaviour leads researchers to attribute unsuccessful TPB interventions to problematic methodology or research design rather than limitations of TPB (Sniehotta, Presseau, & Araújo-Soares, 2014).

While some TPB based interventions have been found to successfully change behaviour in a range of domains (Giles et al., 2014; Jemmott, 2012; Tyson, Covey, & Rosenthal, 2014; Quine, Rutter, & Arnold, 2001; Webb & Sheeran, 2006), others have not be as successful (Chatzisarantis & Hagger, 2005; Hardeman et al., 2002). In any case, it has been pointed out that behaviour is hard to change in general and many methods fail to bring about substantial behaviour change (Kothe, 2014; Trafimow, 2014). No other social cognition theory provides an effective framework

from which to plan interventions. Thus this problem cannot be solely attributed to weaknesses in the TPB.

3.4 Extending TPB: Two-Component TPB.

For a theory of behaviour to be valuable, it must incorporate all variables which account for variance in behaviour, it must be easily operationalised with clear guidelines specifying how to measure each construct, have good predictive validity and inform intervention. Although the TPB is not without limitations, it merits the position of a successful behaviour theory. Identifying limitations does not constitute a critique of the theory but simply an understanding that it is in some extents, limited (Abraham, 2014). The TPB makes the most successful attempt at explaining and changing social behaviour in comparison to other social cognition models (e.g. HBM, PMT, TTM and SCT). There is value in testing extended TPB models as this will build upon what we have already learned.

To increase the theory's predictive strength, researchers have reconceptualised the model to propose what is known as the two-component theory (see Figure 2; Ajzen, 2002a; Elliott & Ainsworth, 2012; Rhodes, & Courneya, 2003a; Rhodes, Blanchard, & Matheson, 2006). In this version, there is now a distinction between instrumental and affective attitudes. As previously mentioned (See Section 3.3) instrumental attitudes relate to the perceived consequences involved in performing the behaviour. In contrast, affective attitudes relate to the individual's perceived positive or negative experiences implicated in performing the behaviour and the emotions this provokes (Fishbein & Ajzen, 2010). This distinction can be traced to the multi-component view of attitude (e.g. Rosenberg, 1956; Rosenberg, Hovland, McGuire, Abelson & Brehm, 1960) which viewed attitudes as

comprising three components; cognitive (beliefs or knowledge towards the attitude object), affective (feelings towards the attitude object) and behavioural (predisposition to act towards the attitude object) components. This final component, however, is now thought of as behavioural intention rather than a dimension of attitude.

An example of an affective attitude question is "I would like/dislike to work in an inclusive setting". Rhodes et al. (2006) likened this distinction to the 'hearts' (affective attitude) and 'minds' (instrumental attitude) of behavioural evaluation. French et al. (2005) examined differences in beliefs and how these related to instrumental and affective attitudes. Results showed that beliefs elicited by cognitive questions were closely related to instrumental attitudes whereas affective beliefs were related to affective attitudes. This provides further evidence for the distinction between the two components, showing that they are determined by different underlying beliefs. Empirical evidence for the distinction between instrumental and affective attitudes is well documented (Edwards & Von Hippel, 1995; French et al., 2005; Rhodes & Courneya, 2003a; Rivis & Sheeran, 2003; Trafimow & Sheeran, 1998) and discriminate validity of the constructs has been confirmed (Rhodes et al., 2006).

Both components of attitude can have independent effects on behaviour. Research examining the predictive utility of each attitude component and has found affective attitudes to be strong predictors of intention than instrumental attitudes in a range of behaviours (Ajzen & Driver, 1992; Kraft, Rise, Sutton, & Røysamb, 2005; Lowe, Eves & Carroll, 2002; Rise, Kovac, Kraft & Moan, 2008; Trafimow et al.,

2004). The two-component TPB therefore offers a fuller understanding as to the role of attitudes in the prediction of intentions and behaviour.

Two components of perceived social pressure have also been distinguished: injunctive and descriptive norm. Injunctive norm relates to perceptions that significant others approve of the behaviour. This is synonymous with the traditional subjective norm construct in the original TPB (renamed 'injunctive norm' as it relates to a social norm concerning the individual's behaviour). On the other hand, descriptive norm involves the belief that others are performing the behaviour (Fishbein & Ajzen, 2010). The individual may feel that it is appropriate to perform the behaviour on the basis that everyone else is too.

Reconceptualising subjective norm may address some of the issues previous work has raised regarding the predictive validity of this component. In a meta-analysis of 14 studies, Rivis and Sheeran (2003) found descriptive norm to be a better predictor of intention than injunctive norm. Further, Elliot and Thomson (2010) found descriptive norm to be the only significant normative variable which predicted driver's spending intentions. Other research, however, has failed to find a significant effect of normative pressure on intentions even with the inclusion of descriptive norms (Rhodes et al., 2006). It should be noted that Ajzen (1991) stated that the predictive strength of each component will vary between different behaviours meaning that Rhode et al.'s findings cannot be generalised further than exercise behaviour.

Finally, a distinction is made between two dimensions of PBC: self-efficacy and controllability (Ajzen, 2002b). Controllability, which is identical to PBC in the

original TPB, refers to the degree to which the individual believes she or he has control over performing the behaviour (Fishbein & Ajzen, 2010). This decision is reached by considering external factors, such as resources or opportunities, which may enhance or inhibit performance of the behaviour. In contrast, self-efficacy concerns beliefs regarding how capable the individual feels he or she is of performing the behaviour (Bandura, 1986, 1994, 1997). Previous research has found self-efficacy to have a strong relationship with inclusive intentions (Brady & Woolfson, 2008; Sharma et al., 2012; Woolfson & Brady, 2009). Although these studies did not implement TPB, this suggests self-efficacy may be an important variable.

Both controllability and self-efficacy have been found to independently influence intentions and behaviour (Armitage & Conner, 1999). In a review of 11 studies, Trafimow, Sheeran, Conner, and Finlay (2002) found controllability and self-efficacy were distinguishable across a wide range of behaviours. Further, they found evidence to suggest self-efficacy is a stronger predictor of intention and behaviour than controllability. Ajzen (2002a) began to support this distinction and now recommends including self-efficacy and controllability items when constructing a TPB questionnaire.
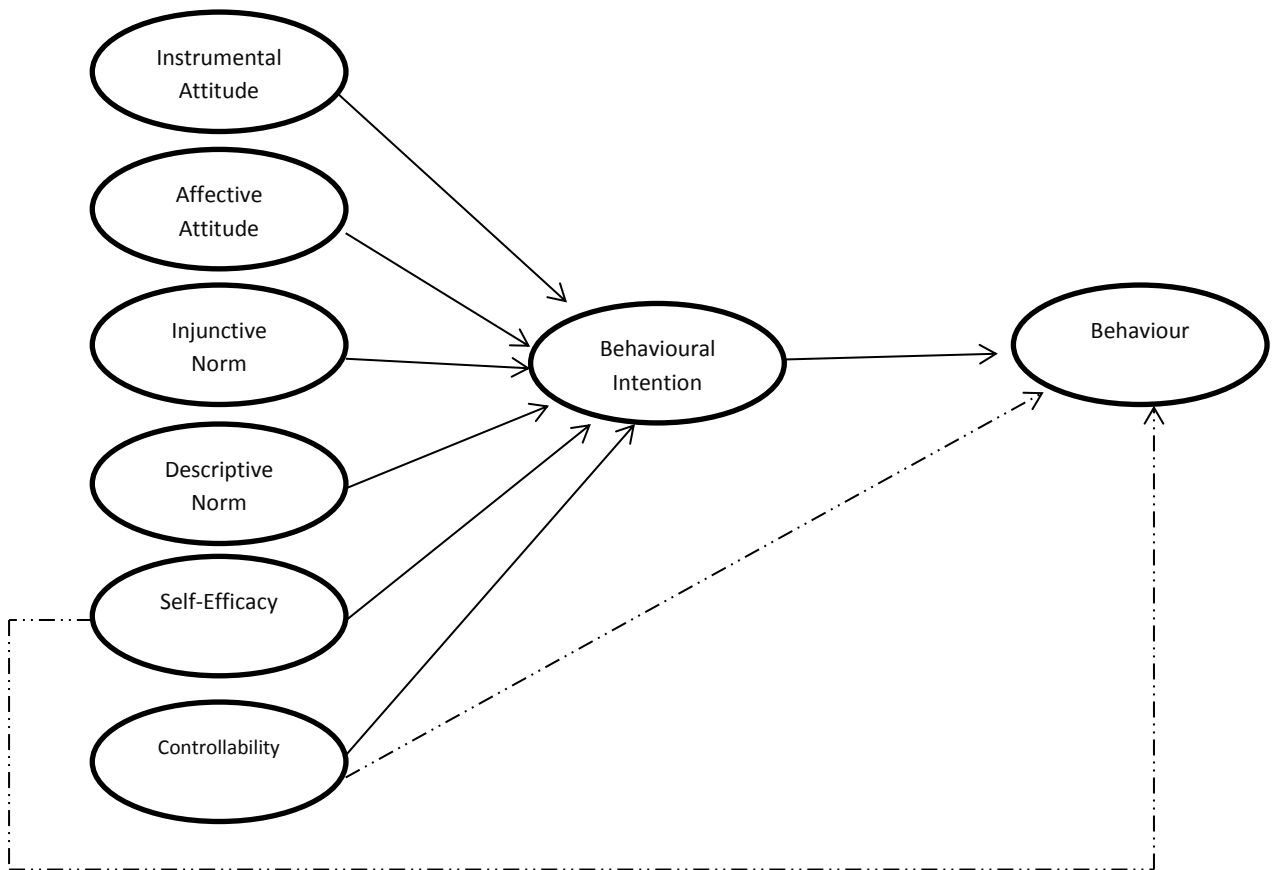
Figure 2. Two-Component Theory of Planned Behaviour

Reconceptualising the theory in this way increases the predictive strength of the theory (Elliott and Ainsworth, 2012; Elliott & Thomson, 2010) and provides further insight of the determinants of behaviour (Conner, 2014). For this reason, it is becoming more common for research to implement the two-component theory in the investigation of the target behaviour in place of the traditional one-component TPB.

3.4.1 Application of two-component TPB to education setting. The two-component theory has been used to explain a wide range of behaviours such as illegal mobile phone use while driving (Waddell & Wience, 2014), speeding (Elliott & Thomson, 2010), breast feeding (Lawton, Ashley, Dawson, Waiblinger, & Conner, 2012) and exercise (Rhodes et al., 2006). Fewer attempts, however, have

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been made to utilize the two-component TPB in an educational setting. As this theory shows higher predictive validity than the one-component TPB (Elliott & Ainsworth, 2012); it would be appropriate for research within an educational setting to adopt the two-component theory.

In a recent study, Schaafsma, Kok, Stoffelen, van Doorn and Curfs (2014) used the two-component TPB to examine factors which influenced care staff in teaching sex education to adults with ID. Compared to those who did not teach sex education, those who did reported higher intentions to do so, reported their environment as more positive towards teaching sex education (i.e. injunctive social norm), believed that a high number of other staff members taught sex education (i.e. descriptive norm) and scored higher on affective attitude. Instrumental attitudes and self-efficacy, however, were found to be high in all staff, regardless of whether they taught sex education. These findings are relevant in that they relate to the education of people with an ID and show both dimensions of subjective norms to be important while raising questions regarding the predictive utility of instrumental attitudes and self-efficacy. The generalizability of this is, however, limited. The investigation focused on the education of adults. Further, the participants were not primary school teachers but instead were trained to work specifically with those with an ID. Their beliefs and behaviour may therefore be different to mainstream primary teachers who are less familiar with teaching learners with an ID. Evidence has supported the application the two-component TPB to mainstream education (Lee, Cerreto, & Lee, 2010; Yan & Cheng, 2015). Despite this, no research has used the theory to examine mainstream teacher cognitions and reported behaviour towards including children with ID.

3.4.2 The role of personality on the TPB. There are compelling arguments that personality and cognitive (TPB components) influences on behaviour should be combined within one theoretical paradigm (Conner & Abraham, 2001). It is argued that the two-component TPB is the most appropriate social cognition theory to implement in the prediction of behaviour, yet, there may be a need for the TPB to acknowledge individual differences in behaviour. Personality can influence the attitudes, perceived norms and PBC people hold towards performing certain behaviours which in turn influences intention and behaviour (Fishbein and Ajzen, 2010). Further, personality traits may moderate the effects of attitudes, subjective norms and PBC on intentions to perform the behaviour (Fishbein & Ajzen, 2010). Incorporating personality into the TPB not only would provide insight into the mechanism by which personality influences behaviour but also has the potential to further theory by acknowledging individual differences as a new variable.

TPB and personality research. Research within health and social settings has demonstrated the mediating effects of TPB components in the relationship between personality and behaviour. For example, individuals high in conscientiousness are organised and strive for achievement. This is likely to entail formulating plans and committing to perform relevant behaviours. Thus, conscientiousness may have an indirect effect on behaviours, mediated by individual differences in TPB variables (i.e. intentions). Evidence consistent with this has been obtained in studies of health-related behaviour (Conner & Abraham, 2001; De Bruijn et al., 2009; McEachan et al., 2010). Individuals high on conscientiousness are more likely to excel in their job (Mathews & Deary, 1998; Ones &Viswesvaran, 1996). This has been supported in relation to a number of professions (Barrick & Mount, 1991). Such individuals are

effective in planning, organising and carrying out tasks (John & Srivastava, 1999; Costa & McCrae, 1985). Conscientious individuals were more likely to see a task through and complete it (Picazo-Vela, Chou, Melcher, & Pearson, 2010).

This finding may be transferable to inclusive teaching in that those high in conscientiousness will have positive attitudes towards inclusion as this is in their job remit and they want to work in the most appropriate way. Further, organisation is fundamental to teaching success and it has been suggested that teachers higher in conscientiousness spend considerably longer planning school activities during non-school hours (Clark & Yinger, 1979; Pittman, 1985). Thus teachers high in conscientiousness may be more likely to act inclusively as they are likely to spend time outside working hours to prepare materials. This preparation may lead to a higher sense of control over the situation and thus a higher intention to perform the behaviour. This point is supported by Djigić, Stojiljković, and Dosković's (2014) finding that conscientiousness was significantly related to teachers' feelings of self-efficacy.

A moderating role of conscientiousness in the intention-behaviour relationship has also been reported (Conner, Rodgers, & Murray, 2007; Rhodes et al., 2002). Given that individuals high in conscientiousness are organised and strive for achievement, the salience of inclusive beliefs may be stronger. Indeed, accessibility has been found to influence the relationship between beliefs and behaviour (Fazio, Chen, McDonel, & Sherman, 1982). Thus, the correspondence between beliefs and behaviour is likely to be stronger in those high on conscientiousness as a result of inclusive beliefs being more accessible.

Extraversion has also been found to be important in the intentions and behaviour relationship (Hoyt, Rhodes, Hausenblas, & Giacobbi, 2009; Rhodes & Courneya, 2003b). Individuals high on this trait are more likely to have high levels of enthusiasm. Rhodes et al. (2002) found that this trait moderated the relationship between intentions and behaviour. Individuals high on this trait are more likely to have high motivation as a result enthusiasm and assertiveness, thus strengthening the intentions and behaviour relationship. Finally, neuroticism has been found to moderate the subjective norm and intention relationship (Rhodes et al., 2002). It was argued that those high on neuroticism are more likely to perform a behaviour where they perceive there to be much social pressure to do so. Again, these findings suggest that personality influences the strength of beliefs which ultimately influences the behaviour.

Few studies have attempted to assess the role of openness and agreeableness. Given that openness relates to readiness to take on new ideas and agreeableness concerns tendencies to be considerate of others (McCrae & Costa, 1990), these traits may too be important. The effect of all of the big five personality traits on teachers' inclusive beliefs and reported behaviour therefore merit examination. Teacher personality may be important to performance of inclusive behaviours given that it impacts the way teachers think, organize their classroom and respond to students (Klassen & Tze, 2014; Mohanna, Chambers, & Wall, 2007; Polk, 2006; Rushton et al., 2007). Despite this, little research has attempted to examine the role of teacher personality in the implementation of inclusive teaching practices.

TPB, personality and inclusive behaviours. In one attempt to examine both TPB and personality, Elik et al., (2010) investigated pre-service teachers' attitudes and intentions towards inclusion of children with learning and behavioural difficulties and participants' open-minded thinking dispositions. This could be thought of as similar to the openness trait as it involves flexibility in belief systems (see Section 2.5.1). Given that it also concerns the amount of time spent on a problem before giving up (Stanovich & West, 2007), it may also be related to conscientiousness as individuals high in this are driven to achieve, determined and do not become easily distracted.

Results showed that teachers with more open-minded thinking reported more positive instrumental and affective attitudes towards adapting their instruction for students with difficulties. This suggests that openness and conscientiousness may play a role in teachers' inclusive beliefs. Despite this, this conclusion must be viewed with caution as the authors did not specifically measure these traits. Further, the study did not measure behaviour. Thus there is a need to investigate this area in more depth. Although this study offers one of the only attempts at integrating individual differences in teachers and antecedents of their inclusive education behaviour, it is limited in that it recruited students who were only one month into their teacher training. This raises the question as to whether these results could be generalised to in-service teachers

3.5 Summary

This chapter discussed the importance of social cognition theories in understanding the relationship between beliefs and behaviour. It is argued that the TPB may be useful to aid the understanding of teachers' inclusive behaviours. The

development of this theory, strengths and weaknesses and competing social cognitive theories were discussed. Further, it was acknowledged that although application of TPB to an educational setting has been limited, such work suggests that TPB could provide a useful framework for understanding how teachers' attitudes, feelings of social pressure, PBC and personality influence intentions and inclusive behaviours. Implementing TPB in the way recommended by Ajzen could contribute to our understanding of the influence of teacher variables in successful inclusion as well as providing a novel test of a major theory.

Chapter 4 - Pilot Study; Developing a TPB Questionnaire to Measure Teachers' Inclusive Beliefs and Reported Behaviour.

The examination of the relationship between teachers' beliefs and reported inclusive behaviour towards children with ID using TPB required the development of a new measure. As discussed in Chapter 3, research which has applied TPB to predict teachers' inclusive behaviours has not measured the theory's components in the way recommended by Ajzen (e.g. Ahmmed et al., 2014; Elik, et al., 2010; Kuyini & Desai, 2007; MacFarlane & Woolfson, 2013; Stanovich & Jordan, 1998; Yan & Sin, 2014). As a result of this, there is currently no existing TPB measure of teachers' inclusive behaviours.

In order to develop the questionnaire, commonly used items were taken from manuals on constructing TPB questionnaires (Ajzen, 2002a; Fishbein & Ajzen, 2010; Francis et al., 2004). This not only ensured items conformed to the principle of compatibility (See Chapter 3 Section 3.3.4) but also that selected items were similar to those used in health and social settings. This would allow the findings to be directly comparable to TPB research examining social and health behaviours and thus would predict insight into the generalisability of TPB. All TPB components were measured with respect to three classroom adaptations: Modifying curricular content; Adapting regular resources; and Adapting pace of instruction. These behaviours were identified in the literature as important for the inclusion of children with ID (e.g., Graham et al., 2008; Kurth & Keegan, 2012; Roy et al., 2013; Scott, Vitale, & Maten, 1998; Swanson, 2001; Yuen et al., 2005). All questions were asked in relation to each of these behaviours. Scores were then averaged across the

behaviours to produce a single score for each component. This approach is recommended by Fishbein and Ajzen (2010). Rather than assessing a single behaviour, it is possible to assess a behavioural category using a representative set of actions.

When developing a questionnaire, it is important to determine whether participants are interpreting the items in the way the researcher intended these to be understood. It is therefore useful to obtain narratives from the individual to identify what he or she is consciously attending to when completing the measure (Ecrisson & Simon, 1993). Such an investigation may identify difficulties individuals encounter when completing the questionnaire. This is of particular importance to the present study given that no research has implemented a TPB questionnaire with a population of teachers. One way to carry out such an investigating is through the use of the 'think aloud' protocol. This involves asking participants to report their thoughts as they answer each item of the questionnaire.

4.1 Using the 'Think Aloud' Protocol in TPB Questionnaire Development

Although the 'think aloud' method has commonly been employed in questionnaires research (Gardner & Tang, 2013; Kaklamanou, Armitage, & Jones, 2013; van Oort, Schröder, & French, 2011), it has received little attention in the TPB literature. In the studies which have employed this method to inform TPB measures, issues completing the measures have been identified.

The 'think aloud' protocol has identified problems with items measuring the subjective norm component of TPB. For example, French, Cooke, McLean, Williams and Sutton (2007) found that one participant answered 'neither agree or

disagree' to items assessing subjective norm because they felt it was no one else's business whether they exercised or not. Although this may suggest that this participant simply does not feel socially pressured to exercise, the question is not asking if it is others' business but asks about others' approval. Darker and French (2009) also identified subjective norm items as problematic as a result of the range of opinions the phrase 'important others' referred to. Participants struggled to decide which individuals to consider when answering this question. A point to note here however, is that the target behaviours in these studies were of a personal nature (i.e. walking and exercising). This may make it difficult to consider who 'important others' are given that the behaviour will only impact the individual. In this thesis, teachers' work behaviour was examined. As a result, there may be less ambiguity with regards to who to consider when answering these items. Despite this, it is still important to investigate any issues surrounding subjective norm items.

An issue has also been raised with regards to the intention component items in the (Darker & French, 2009). The similarity of the wording of these items often confused participants as they felt they were repeating themselves. This is a challenge to any potential TPB measure in that it is recommended that multiple items are used to measure each TPB construct (Bowling, 1997). Darker and French (2009) argued that this issue may be reduced by informing participants about why there is a need to ask similar questions a number of times.

4.2 The Current Study

These studies demonstrate the usefulness of carrying out a 'think aloud' study when designing a TPB measure as results can highlight problems with completion of the measure, such as those described above and provide suggestions

for improvement. This pilot study therefore used the 'think aloud' protocol to examine a TPB measure developed to assess teachers' inclusive beliefs and reported behaviours in mainstream classrooms as part of a larger study. This aimed to solve any unforeseen problems with the measure by using feedback from a sample of the target population.

4.3 Method

4.3.1 Participants

Six female mainstream primary teachers working in schools in Scotland were recruited. This number of participants has been found to be effective for the purposes of 'think aloud' research (Francis et al., 2004; French et al., 2007). Age ranged from 23-60 years with a mean age of 45.67 years (S.D= 17.58). Mainstream teaching experience ranged from 1 year to 35 years (M= 17.00 years S.D= 13.16).

4.3.2 Measures

Demographic information. Participants were asked to provide information regarding their gender, age, qualifications, special education training, what age group they teach, years of experience teaching, years of experience teaching a child with ID and if they currently have a child with ID in their class.

TPB measure. As previously stated, this measure was based on published guidelines detailing the appropriate construction of a TPB measure (Ajzen, 2002a; Fishbein & Ajzen, 2010; Francis et al., 2004). The constructs of the TPB were each measured with respect to three important inclusive strategies; (1) Modifying curricular content for the student; (2) Adapting regular resources (e.g. textbooks,

worksheets) for the student; (3) Adapting the pace of instruction for the student.

Before completing the questionnaire, participants were given the following passage

to read;

We are conducting a study of primary school teachers in Scotland. We are interested in experiences of working with children with intellectual difficulties and how these experiences vary between different teachers. We would appreciate your responses to some questions about this issue. There are no right or wrong answers to any of the questions. It will not be possible to identify you as an individual from your responses. Please read the information in the box below and then answer the questions on the next page. Thank you, your time is much appreciated.

We are interested in the factors which influence the inclusion of children with intellectual difficulties (ID) in mainstream schools. We would like you to think of the term ID as including children who find it difficult to learn, understand new or complex information, communicate with others and cope independently. This can include children with a diagnosis of ID, learning difficulties or those who have difficulties in these areas but do not have a diagnosis.

Components of attitude. Attitudes were assessed by using both instrumental

and affective attitude items. An example statement which preceded the adjectives is;

'For me, modifying curricular content when working with pupils with intellectual

difficulties over the next two weeks is..' Six bipolar adjective scales tapped into the

instrumental attitude component (1= *negative*; 9= *positive*: 1= *unimportant*; 9=

important: 1= *unnecessary*; 9= *necessary*: 1=*not at all rewarding*; 9= *rewarding*: 1=

a terrible idea; 9= *a great idea*: 1= *detrimental*; 9= *beneficial*). Six bipolar adjective

scales assessed affective attitude (1= *aggravating*; 9= *satisfying*: 1= *unpleasant*; 9=

pleasant: 1= *unenjoyable*; 9= *enjoyable*: 1= *boring*; 9= *interesting*: 1= *stressful*; 9=

relaxing: 1= *undesirable*; 9= *desirable*). These items were also used to assess

attitudes towards the remaining two inclusive behaviours (i.e. adapting regular

resources and adapting the pace of instruction for the child). Scores were then

aggregated across the three behaviours to create a mean attitude score for the

behavioural category 'inclusive behaviours'.

Components of subjective norm. Subjective norms were assessed using injunctive norm and descriptive norm items for each of the three inclusive behaviours. Injunctive norms were assessed using three items; 'Most people who are important to me would want me to modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1= *strongly disagree* to 7= *strongly agree)*; 'The people in my life whose opinions I value would want me to modify curricular content when working with pupils with intellectual difficulties in the next two weeks.' (1= *strongly disagree* to 7= s*trongly agree*); 'I feel under social pressure to modify curricular content when working with pupils with intellectual difficulties in the next two weeks.' (1= *strongly disagree* to 7= *strongly agree*). The same questions were asked in relation to the remaining two behaviours. The mean of three items was used to assess descriptive norm. These are; 'Many teachers modify curricular content when working with pupils with intellectual difficulties.' (1=*strongly disagree* to 7=*strongly agree*); 'Of the teachers you know, how many do you think will modify curricular content when working with pupils with intellectual difficulties ?' (1=*none of them* to 7=*all of them*); 'How often do you think that other teachers modify curricular content when working with pupils with intellectual difficulties?' (1= *never to* 7= *all the time*). These items are frequently used in TPB research (e.g. Andrykowski, Beacham, Schmidt & Harper, 2006; Chatzisarantis & Hagger, 2007; Elliott & Ainsworth, 2012; Rhodes & Courneya, 2003a).

Components of perceived control. PBC was measured using two distinct components; self-efficacy and controllability. Self-efficacy was measured using three items; 'How confident are you that you will be able to modify curricular

content when working with pupils with intellectual difficulties over the next two weeks?' (1= *not confident* to 7= *extremely confident*)'; 'I have the ability to modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1= *strongly disagree* to 7= *strongly agree*); 'To what extent do you see yourself as being capable of modifying curricular content when working with pupils with intellectual difficulties over the next two weeks?' (1= *very incapable* to 7= *very capable*). Similarly, controllability was assessed using three items; 'It is completely up to me whether or not I modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=*strongly disagree* to 7=*strongly agree*); 'How much personal control do you feel you have over modifying curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=n*o control at al*l to 7= *complete control*); 'It is first and foremost up to myself whether or not I modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=s*trongly disagree* to 7=*strongly agree*). These same questions were asked in relation to the remaining two behaviours. These items have been used in previous TPB work (Elliott & Ainsworth, 2012; Rhodes & Courneya, 2003c).

Behavioural intention. Three items assessed behavioural intention to use inclusive strategies. The items were 'I intend to modify curricular content when working with pupils with intellectual difficulties over the next two weeks?' (1=*strongly disagree* to 7=*strongly agree*); 'How likely is it that you will modify curricular content when working with pupils with intellectual difficulties over the two weeks?' (1=*extremely unlikely* to 7=*extremely likely*); I will try to modify curricular content when working with pupils with intellectual difficulties over the

next two weeks.' (1=*strongly disagree* to 7=*strongly agree*). These questions were used to measure the remaining two behaviours. Such items are commonly used in TPB literature (Beck & Ajzen, 1991; Elliott, Armitage & Baughan, 2003; Hrubes, Ajzen, & Daigle, 2001).

Reported inclusive behaviour. Reported inclusive behaviour was measured using three questions; 'I have modified curricular content when working with pupils with learning disabilities over the past two weeks' (1=*strongly disagree* to 7= *strongly agree*); 'To what extent have you modified curricular content when working with pupils with intellectual difficulties over the past two weeks?' (1= *no extent at all* to 7= *a great extent*); 'I often modified curricular content while working with pupils with intellectual difficulties over the last two weeks' (1=*strongly disagree* to 7= *strongly agree*). These same questions were asked in relation to the remaining two behaviours.

Personality. The Big Five Inventory (BFI; Benet-Martinez & John, 1998; John, Donahue & Kentle, 1991; John, Naumann & Soto, 2008) was used to measure teachers' personality at Time 1. This is a 44-item measure which measures the core attributes of the big five personality traits (John et al., 2008). Conscientiousness is measured using nine items (e.g. 'I am someone who is a reliable worker'). Ten items assess openness (e.g. 'I see myself as someone who has an active imagination'). Extraversion is measured using the mean of eight items (e.g. 'I am someone who is full of energy'). Neuroticism is assessed using the mean of eight items (e.g. 'I am someone who worries a lot') and agreeableness was calculated using the mean of nine items (e.g. 'I am someone who is considerate and kind to almost everyone'). Participants were asked to report how much they agreed or disagreed on a 5-point

Likert scale (1= *strongly disagree* to 5= *strongly agree.* The measure has

demonstrated good content coverage and psychometric properties (John et al., 2008).

Internal consistency has been previously confirmed (Ekehammar, Akrami, Gylje &

Zakrisson, 2004; Judge, Simon, Hurst & Kelley, 2013; Noftle & Shaver, 2006; Ryan

& Xenos, 2011) and the factor structure has been supported in a large scale cross-

cultural comparison study (Schmitt, Allik, McCrae & Benet-Martínez, 2007).

4.3.3 Procedure. Ethical approval was obtained from University of

Strathclyde School of Psychological Sciences and Health Ethics Committee.

Potential participants were contacted via telephone to inform them of the pilot study.

They were asked to contact the researcher to arrange a date and time if they wished

to participate. This meant participants were not put 'on the spot' when first contacted

and could take time to decide whether they wanted to participate.

Before beginning, informed consent and permission to audio record the

session was given by each participant. The researcher then explained that the

questionnaire measured teachers' inclusive beliefs and reported behaviours when

working with children with ID and that the aim of the study was to check that

participants interpreted the items in the way the researcher intended. Participants

were asked to 'think aloud' while completing the questionnaire and were told that

this meant they should say out loud everything they were thinking as they read and

answered each question. They were instructed not to plan their answers but to speak

as if no one was there. These instructions were based on previously used 'think

aloud' protocol (Darker & French, 2009; French et al., 2007; Green & Gilhooly,

1996). Participants were also informed that the researcher may ask for further

information during this process. Finally, participants were told that their opinion of the selection of reported inclusive behaviours included in the questionnaire would be sought. This would indicate whether the selected behaviours within the questionnaire were representative of the types of strategies teachers believe are important in an inclusive classroom. Any queries were then dealt with at this stage before asking the participant to begin.

The length of the session varied between participants and ranged from 23.01 minutes to 53.47 minutes (M= 37.15 S.D. = 12.81). This, however, does not reflect the length of the questionnaire as it was common for participants to tell the researcher anecdotes during completion of the measure. While this provided rich information regarding teachers' roles in an inclusive classroom, not all of this was relevant to the purposes of the pilot study.

Analyses. NVivo 10 was used to transcribed and code the data. All participants were given a pseudonym to protect their anonymity. As such, all names used in the results section are not participants' real names. The following section discusses the changes made to the questionnaire based on participants' feedback and which pilot items were modified in the final questionnaire.

4.4 Results Pilot Study; Findings and Questionnaire Changes

4.4.1 Behavioural intention. With regards to responses on the behavioural intention items, it was common for participants to answer 'strongly agree' to each of these questions. Extracts from participants Natasha, Lorna and Hayley demonstrate the high intention scores;

Natasha: ...I think for all of these, a teacher should be doing that anyway. Teachers should be doing that and if they are not, then they are not doing their job right.

Lorna: I think everyone is going to fill this in the way I'm doing because that's what they want to do.

Hayley: Yeah, I suppose this one would always be (ticking strongly agree), you would always have to be thinking 'only if it was relevant'. If something wasn't working for them, if you noticed something wasn't working for them. So I suppose you would always have to be in the frame of mind that you would always be looking to improve if you could.

These extracts suggest a possible ceiling effect. Ceiling effects are common in TPB studies (Elliott & Armitage, 2009; Krones et al., 2010; Plotnikoff, Lubans, Costigan, & McCargar, 2013; Ramsay, Thomas, Croal, Grimshaw, & Eccles, 2010). To address this, a 9-point scale rather than the commonly used 7-point scale is recommended as this can produce more varied responses (Elliott, Thomson, Robertson, Stephenson, & Wicks, 2013). In light of this, it was decided that a 9-point Likert scale would replace the 7-point scale in order to avoid ceiling effects occurring in the larger study (i.e. Study 1).

It also became clear that items with responses such as 'extremely likely-extremely unlikely' generated more varied responses that simply 'strongly agree-strongly disagree'. Participants tended to frequently tick 'strongly agree' but were more likely to use the other scale points when responding to questions regarding likelihood. This is supported by a comment by one of the participants, Lorna;

Lorna: 'How likely is it that you will adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?' Ehh, how likely it is. It's likely but it's not extremely likely.

As a result, the response option for the item 'I will try to modify curricular content when working with pupils with intellectual difficulties over the next two

weeks' was replaced with '1= not at all to 9= very often' rather than '1= strongly disagree to 9= strongly agree'.

The final intentions items to be used in the questionnaire were 'I intend to modify curricular content when working with pupils with intellectual difficulties over the next two weeks (1=*strongly disagree* to 9= *strongly agree*)'; 'I will try to modify curricular content when working with pupils with intellectual difficulties over the next two weeks (1= *not at all* to 9= *very often*)'; 'How likely is it that you will modify curricular content when working with pupils with intellectual difficulties over the next two weeks? (1= *strongly unlikely* to 9= *extremely likely*)'.

4.4.2 Reported inclusive behaviour. Participants were asked to provide feedback on the inclusive behaviours used in the questionnaire. This allowed the researcher to be sure that the behaviours were capturing classroom adaptations that are important to successful inclusion. All participants felt that the behaviours did accurately reflect what they are expected to do to accommodate for children with an ID. The extracts below demonstrate this;

Rhona: Well that's it. I mean your pace, your resources and your curriculum.

Gail: No those points you have are quite good. That's the main things when you are planning.

Jane: So it's resources, the pace and curriculum... I can't think of anything else.

Participants therefore found the items clear with respect to what was meant by modifying curricular content, adapting regular resources and adapting pace of instruction. Each participant provided examples of how she adapted the curriculum, used different resources and changed instruction within her classroom. Examples

included using different textbooks, worksheets and homework. Participants also reported making instructions slower, clearer and simpler. This indicated that teachers understood what was meant by the term 'adaptation' and is in line with perceptions reported elsewhere (Graham et al., 2008; Kurth & Keegan, 2012; McLeskey & Waldron, 2002; Schumm & Vaughn, 1991).

Similar to the intention items, more variability in scores was produced when response scales asking 'how often' or 'to what extent' they had performed the behaviour over 'agree-disagree' items. For this reason, a new question was added in to the measure; 'How often have you modified curricular content when working with a children with intellectual difficulties over the past two weeks?' (1= *no days* to 9= *everyday*). This item is recommended by Ajzen (2002). Further the item 'I often modified curricular content while working with pupils with intellectual difficulties over the last two weeks' (1= strongly disagree to 7= strongly agree) was replaced with 'How often did you adapt the pace of instruction while working with pupils with intellectual difficulties over the last two weeks? (1= *never* to 9= *very frequently*).

The final behaviour questions were therefore 'I have modified curricular content when working with pupils with intellectual difficulties over the past two weeks' (1= *strongly disagree* to 9= *strongly agree*); 'How often did you modify curricular content when working with pupils with intellectual difficulties over the last two weeks' (1= *never* to 9= *very frequently*); 'To what extent have you modified curricular content when working with pupils with intellectual difficulties over the past two weeks?' (1=n*o extent at all* to 9= *a great extent*); 'How many days did you

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modified curricular content when working with pupils with intellectual difficulties over the past two weeks? (1= *no days* to 9= *everyday*).

4.4.3 Attitude items. These items generated interesting comments as to why teachers may hold positive attitudes (e.g. seeing a difference in the child and doing what is required to meet the child's needs) or negative attitudes (lack of time, extra effort, fear of failing and the need to give attention to all the children in the class) and suggested that teachers did not always hold strong positive attitudes towards inclusion. A decision was made to remove the item 'good-bad'. It was clear that participants found this difficult to answer and that this was too similar to the 'positive-negative' item. The extracts below demonstrate this;

Jane: I find it quite difficult. It's too general, it's not specific enough. Because is it extremely bad, in what way? I'm not sure. I'm going to tick in the middle.

Lorna: Why do you have 'good and bad' in? It's a bit kind of, basic. Do you know what I mean?

Lorna: Extremely, negative? Emm to me, your 'good and bad' is the same as this, is it not? For me, it would be a positive thing to do.

The final measure therefore contains six instrumental attitude items (1= *extremely negative* to 9= *extremely positive*; 1= *extremely unimportant* to 9= *extremely important*; 1= *extremely unnecessary* to 9=*extremely necessary*; 1= n*ot at all rewarding* to 9=*rewarding*; 1= *a terrible idea* to 9= *a terrible idea*; 1= *extremely detrimental* to 9= *extremely beneficial*. The final six affective attitude items are 1= *extremely aggravating* to 9= *extremely satisfying*; 1= *extremely unenjoyable* to 9= *extremely enjoyable*; 1= *extremely boring* to 9= *extremely interesting*; 1= *extremely stressful* to 9=*extremely relaxing*; 1= *extremely unpleasant* to 9=*extremely pleasant*; 1= *extremely undesirable* to 9= *extremely desirable*.

4.4.4 Subjective norm items. When participants completed the injunctive norm items, the researcher asked each participant who she was thinking of as the 'important other'. Similar responses came from all participants. They reported thinking of the child, parents, head teacher and other classroom teachers. Participants stated that the child was important given that adaptations must work for them. The child's parents were noted as important because they knew the child best and teachers must communicate with them as to how their child is progressing. Some participants thought of the head teacher because they were expected to act inclusively and ultimately, must report to the head teacher. Finally, although all participants said other classroom teachers, one participant elaborated on this saying she felt a duty to the teacher who would teach the child in the next year. These findings are in contrast to that of French et al. (2007) and Darker and French (2009) who argued that participants showed difficulty with injunctive norm items. In the current study, participants knew who to think of without being prompted when responding to these questions. No injunctive and descriptive norm items were changed.

4.4.5 Perceptions of control. No difficulties were associated with the self-efficacy items and thus these items were not changed. With regards to the controllability items, participants frequently provided details of factors which hindered their perception of control over the behaviour. These often related to constraints on time, resources and class size. For example;

Jane: Again because of the limitations in your time and resources, it's maybe not as positive as it might possibly be…

Rhona:… very challenging because in a large class of thirty children, you are also dealing with the rest of the class,

For this reason, it was decided to include an item 'How much will factors outside your control influence whether or not you modify the curricular content when working with children with intellectual difficulties over the next two weeks? (1= *not at all* to 9= *very much so*)' to capture the belief that external factors can lower feelings of control. This item has been used in previous research to assess perceived controllability (e.g. Elliott & Ainsworth, 2012). To avoid the questionnaire becoming too long, this new item replaced 'It is first and foremost up to myself whether or not I modify curricular content when working with pupils with intellectual difficulties over the next two weeks'.

The final self-efficacy items included; 'How confident are you that you will be able to modify curricular content when working with pupils with intellectual difficulties over the next two weeks?' (1= *not confident*; 9= *extremely confident*)'; 'I have the ability to modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1= *strongly disagree*; 9= *strongly agree*); 'To what extent do you see yourself as being capable of modifying curricular content when working with pupils with intellectual difficulties over the next two weeks?' (1= *very incapable*; 9= *very capable*). The final controllability items were; 'It is completely up to me whether or not I modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=*strongly disagree*; 9=*strongly agree*); 'How much personal control do you feel you have over modifying curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=*no control at all*; 9= *complete control*); 'How much

will factors outside your control influence whether or not you modify the curricular content when working with children with intellectual difficulties over the next two weeks?' (1=*not at all*; 9=*very much so*).

4.4.6 General questionnaire changes. Feedback from participants suggested the need to change some smaller features of the questionnaire. For example, it was clear that participants required more instruction before completing the attitude items as they were often unsure of what they were being asked to do; *Gail: Emm. I would say, emm. So I can tick any of these?* and *Lorna: Do I put a tick in each line?*. For this reason, double spacing was used between each instruction. This aimed to make the instructions clearer to encourage participants to read each of these before completing the questionnaire.

Similar to that of Darker and French (2009), the similarity between certain items was also raised by participants and it appeared that their previous responses may have been influencing future responses. For example, one participant, Jane asked; '*So do similar questions keep cropping up together?*' and '*I just wondered if it's sort of trying to compare one answer with another, and saying 'well why does she strongly disagree with that but ticked strongly agreed before?*'. As a result a statement was included during the introduction and instruction page of the measure; 'Some of the questions may appear similar but please answer each of them without considering any of your previous responses, there are no right or wrong answers'.

The researcher also considered whether there was a need to include a social desirability measure in the questionnaire. Such an instrument can assess if participants are answering questions honestly or are responding in a social desirable

way to manage their self-presentation (Crowne & Marlowe, 1960). Although this could allow data from participants who score highly on this measure to be disregarded, the Marlowe-Crowne Social Desirability Scale performs poorly, is empirically weak and flawed theoretically with inconsistencies across samples (Barger, 2002). This suggests using such a scale to identify participants high on social desirable responding is not reliable. Further, responses from participants suggested they were answering honestly as they openly told the researcher when they had negative inclusive beliefs. For example, when answering attitude items, Lorna states' *You want to go towards that 'satisfying' and tick it but it's not 'extremely'.* Jane also states *'its sometimes more frustrating that enjoyable'.* There was also the need to consider the length of the questionnaire and adding these items may have increased retention rate. As a result, social desirability items were not included.

4.5 Summary

The pilot study was useful in confirming the acceptability of a TPB questionnaire developed to assess teachers' inclusive beliefs and reported behaviours towards children with ID. Findings identified areas in which the questionnaire was ambiguous, awkwardly phrased or otherwise difficult to complete. To summarise, the changes implemented were: replacing the 7-point scale with a 9-point scale to address a possible ceiling effect: changing certain response options from 'agree-disagree' to for example, 'not at all-all the time'. This aimed to encourage participants to think about how often he or she performs the behaviour. An attitude item was removed and a PBC item added. Finally, smaller features of the questionnaire were modified such as improving completion instructions and acknowledging the similarity of some items. The pilot study was successful in

creating a TPB measure to help understand the relationship between teachers' beliefs

and reported inclusive behaviours.

Chapter 5 – Study 1: Using the Theory of Planned Behaviour to Examine Teacher Beliefs and Reported Behaviour Towards Including Children with Intellectual Disabilities.

5.1 Aims and Hypotheses

The inclusion of children with ID in mainstream primary schools and the role of the school environment in successful inclusion were discussed in Chapter 2. The chapter argued that regardless of policy which mandates inclusion in schools, it is the classroom teachers who determine its success. The classroom adaptations which teachers should make to successfully include a child with ID were discussed and it became clear that not all teachers consistently implement the required adjustments (see page 30). A need to understand teacher factors that influence the use of inclusive strategies was therefore identified. Examination of this literature highlighted the importance of teacher cognitions and personality in the use of inclusive teaching practices.

It was therefore recognised that there is a need to incorporate beliefs, personality and behaviour within a theoretical framework to understand the relation between teacher cognitions and their use of inclusive teaching practices. The use of psychological theories in the explanation of human behaviour was discussed in Chapter 3. The chapter examined the usefulness of the two-component TPB and in light of arguments for the integration of TPB and personality factors, deemed this as appropriate in examining the relations between teacher beliefs, personality and reported inclusive behaviours for children with ID. [1]

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[1] A paper from Chapter 5 has been published as:

The purpose of Study 1 was therefore to implement the two-component TPB in order to predict the extent to which teachers employ inclusive teaching practices. The study had two main aims. Aim 1.1 was to test the applicability of the two-component TPB in an education setting in order to inform inclusive classroom behaviours in mainstream schools. To the best of the researcher's knowledge, no study has used a prospective design and adopted the two-component theory to examine teacher beliefs and reported inclusive behaviour. By implementing the theory using standard TPB measures and procedures, such an investigation will provide a fuller picture of the role of beliefs on reported inclusive teaching and will contribute to TPB literature by examining the applicability of the theory to an educational setting. The second aim (Aim 1.2) was to examine whether teacher personality impacts intentions or reported behaviour when utilising the two-component TPB.

- **Hypothesis 1.1a**: Attitudes (instrumental and affective), subjective norms (injunctive and descriptive norms) and perceptions of control (self-efficacy and controllability) would individually predict teachers' intentions to use inclusive behaviours.

- **Hypothesis 1.1b**: Teachers' behavioural intention, self-efficacy and controllability would predict teachers' reported inclusive behaviours.

- **Hypothesis 1.2a:** Personality traits (conscientiousness, extraversion, neuroticism, openness and agreeableness) would predict teachers' inclusive intentions and reported behaviour.

- **Hypothesis 1.2b:** Those scoring high on conscientiousness and extraversion would show stronger intention and reported behaviour relationships.

- **Hypothesis 1.2c:** Higher neuroticism scores would relate to a stronger relationship between subjective norms (injunctive and descriptive norms) and intentions. Thus neuroticism would moderate the relationship between subjective norms (injunctive and descriptive norms) and intentions.

- **Hypothesis 1.2d:** TPB components would have mediational effects in the relationships between personality and intention. [2]

5.2 Method Study 1

5.2.1 Participants. At Time 1, data was collected from 145 general classroom primary teachers working in Scottish primary schools. Based on Tabachnick and Fidell's (2007, 2013) sample size calculation relevant to multiple linear regression analyses: 50 + (the number of independent variables x 8), the required sample size was 138 participants. Similarly, a priori sample size analysis carried out using G* Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007; Faul, Erdfelder, Buchner, & Lang, 2009) suggested that 123 participants were required to find a medium effect size. The sample size of 145 was therefore sufficient. The

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[2] The one-component TPB was also tested (see Appendix 3). However, as expected, the two-component model explained more of the variance in reported behaviour.

sample comprised 17 males and 124 females, 4 participants did not provide this information. Age ranged from 22 to 62 years (M= 37.74, S.D. = 11.71). Mean teaching experience was 13.78 years (S.D= 10.09) which ranged from participants with 1 years' experience to participants with 40 years' experience.

It was difficult to ensure participants received Time 2 questionnaire packs as the researcher left these at school reception offices for distribution rather than issuing them directly to participants. As a result, the head teacher or administration staff identified which teachers required a Time 2 questionnaire pack. Even so, 81 participants (56%) who responded at Time 1 subsequently completed the Time 2 questionnaire. This comprised 72 females and 9 males. Age ranged from 22 to 62 (M= 37.56 S.D= 12.36). Mean teaching experience was 14.25 years (S.D= 11.34). This ranged from participants with 1 years' experience to participants with 40 years' experience. According to Tabachnik and Fidell's (2007, 2013) rule of thumb, this was still a large enough sample to examine predictors of reported behaviour. Post hoc power analysis indicated power was .88. Field (2013) argued values of .8 or higher indicate sufficient power has been achieved. Multivariate analysis of variance (MANOVA) showed that there were no significant differences with respect to the TPB variables and prior behaviour (i.e. variables measured at Time 1) between participants who responded at Time 2 and non-responders, V= 0.04, $F(10, 129) = 0.56$, $p= .844$.

Recruitment strategy. Three Scottish school districts, East Ayrshire, North Ayrshire and South Ayrshire were contacted in order to obtain permission to contact mainstream primary schools within these authorities about the study. The head of education for South Ayrshire sent the online questionnaire link to all head teachers in

the authority and asked for this to be passed on to class teachers. When permission

was granted from East Ayrshire and North Ayrshire, the researcher sent an initial

email to head teachers which informed them about the study and asked whether they

would allow questionnaires to be distributed to their teachers. Responses to these

emails were poor thus one week later, the researcher followed the email up with a

phone call. Where head teachers agreed to ask their teachers to participate, a time

and date was agreed for the researcher to hand questionnaire packs into the school.

The link to the online questionnaire was also posted on a primary teaching social

networking group and the teaching website 'TeachersTalk'.

5.2.2 Design. The study was prospective in design. At Time 1, self-report

questionnaires were used to measure demographic variables and TPB variables;

attitudes (affective and instrumental), subjective norms (injunctive and descriptive),

PBC (self-efficacy and controllability) and intentions with respect to three inclusive

behaviours. Personality variables were also measured at this point. At Time 2, two

weeks later, respondents were sent a follow-up self-report questionnaire in which

they were asked to report their actual behaviours in school in the two weeks after

completing the first questionnaire. For Aim 1.1 and Hypothesis 1.1a, the

independent variables were attitude (instrumental and affective), subjective norms

(injunctive and descriptive norms) and perceptions of control (self-efficacy and

controllability) and the dependent variable was behavioural intention. For

Hypothesis 1.1b, self-efficacy and controllability were independent variables and

reported behaviour, the dependent variable. For Aim 1.2 and Hypothesis 1.2a,

personality variables were treated as predictors of intentions and behaviour. For

Hypothesis 1.2b and Hypothesis 1.2c, conscientiousness, extraversion and

neuroticism were treated as moderators of TPB component relationships. For,

Hypothesis 1.2d, TPB components were treated as mediators in the relationship

between personality factors and intention. All variables were measured using either

bipolar or Likert scales and thus considered as interval data.

Self-report vs observational methods. When designing a study which

examines behaviour, the researcher must decide to use observational methods or

questionnaires (Muijs, 2006). This can be difficult as there are strengths and

weaknesses associated with both methodologies. Self-report data is criticised as

participants may respond in a socially desirable manner, that is, in a way that

presents themselves and behaviours more favourably than is actually true (Moorman

& Podsakoff, 1992). This is relevant to research examining teachers' behaviour

given that knowledge of school policies may make teachers less willing to disclose

information which admits that they do not conform to these. Although social

desirability questionnaires can be used to determine an individual's tendency to

answer in this way (Crowne & Marlowe, 1960; Kuncel, & Borneman, 2007; Strahan,

& Gerbasi, 1972), these have been found to be unreliable, empirically weak and

theoretically flawed with inconsistencies across samples (Barger, 2002; Hays &

Ware, 1996; Paulhus, & Vazire, 2007; Uziel, 2010). Social desirability can, however,

be reduced by explaining to participants that it is important for him or her to answer

honestly, ensuring confidentiality or anonymity of the data and emphasising that the

research is examining general behaviours rather than individual responses (Gordon,

1987; Nederhof, 1985).

Classroom observations do not suffer from respondent social desirability.

However, individuals may act differently given that the experimenter intrudes on

their natural environment (Howard, Maxwell, Wiener, Boynton, & Rooney, 1980).

This may be deliberate in that the individual consciously puts on a "performance",

acting in ways that are atypical of his or her behaviour. This can also be

unconscious, resulting from the observation causing feelings of nervousness which

again, change the behaviour (Muijs, 2006). Observations are also weakened in that

results are susceptible to observer bias. If the observer already has an opinion or

expectation of the participant, observations are likely to be aligned with these

preconceptions (Hoyt, 2000; Widmeyer & Loy, 1988). The issues raised here

provide an insight into the complexity of choosing a research method. For the

purpose of Study 1, it was thought to be more relevant to examine the extent to

which teacher self-report responses reflect their actual behaviour.

   Use of self-report methods in teacher research. Research examining the

accuracy of teachers' reports of classroom behaviour has suggested that self-report is

not a reliable data collection method for this population (Hook & Rosenshine, 1979;

Lawrenz, Huffman, & Robey, 2003) as they did not correspond with observer reports

of teachers' behaviour. However, classroom observations taken at only one-time

point, on which these claims were based, offer only a 'snapshot'. Several

observations are thus required in order to gain an accurate insight of behaviour

(Desimone, 2009; Muijs, 2006). Further, Hook and Rosenshine (1979) cited studies

which did not measure teacher and observer reports of specific behaviours but

instead based findings on 'average' behaviours. In such studies, it was common for

observer and teacher to complete different measures of behaviour which can explain

the lack of correspondence between the two. These findings have been further

challenged by studies demonstrating that high agreement between observers' and

teachers' self-reports is possible (Clunies-Ross Little, & Kienhuis, 2008; Howard et al., 1980; Koziol & Burns, 1986; Stanec, 2009). When observations were performed over a longer period of time, self-report measures accurately reflected educators' actual behaviour. Significant positive correlations between observed and self-reported use of have been found for both positive and negative management strategies. This indicates that teachers can accurately report not only positive but also negative behaviours they perform in the classroom. It was therefore decided that teacher self-report methods would be suitable for Study 1. This methodology also aligned with Ajzen's (1991) recommendations for measuring TPB.

Common method variance. Using self-report questionnaires to measure all variables within a research study has been criticised by researchers due to common method variance (CMV). Proposed by Campbell and Fiske (1959), CMV is defined as variance that is a result of the measurement method, for example, using only questionnaires to assess all variables of interest, rather than the variance resulting from the constructs being measured. The authors also argued that this leads to increased correlations between variables, not because they are strongly related but simply because these were measured using the same methods. This can then be problematic when researchers interpret their finding or draw conclusions as the observed relationship between variable may be inflated or in fact, deflated (Craighead, Ketchen, Dunn, & Hult, 2011; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, others have argued that there is little evidence supporting the notion that the method itself accounts for variance and that CMV is exaggerated (Conway & Lance, 2010; Lance, Dawson, Birkelbach, & Hoffman, 2010; Lindell, & Whitney, 2001; Spector, 1987, 2006). Further, the impact of CMV

is dependent on the constructs being assessed and how these are measured (Spector, 2006). Spector (2006) further argued that in some cases, studies find no correlations between variables measured with the same methods even when such relationships had been expected. Thus there is a lack of clarity with regards to the nature of CMV, if indeed, it exists and how this actually affects the relationships between variables (Spector & Brannick, 2010).

Despite these arguments against CMV being a significant problem, concerns regarding CMV are often raised by journal reviewers during the review process (Chan, 2009; Spector, 2006). Thus regardless of the magnitude of the problem, it is important for researchers to address CMV at the design stage of research. While both procedural remedies and post hoc analyses have been developed to either control for CMV or to demonstrate that it has little impact on the results (Spector & Brannick, 2010), Conway and Lance (2010) argued that post-hoc analyses have poor empirical results and recommended that these are not used. Thus researchers must look to procedural remedies to control for CMV.

Study 1 used such procedures proposed by Podsakoff et al. (2003). The authors argued that controlling for CMV involves reducing participants' ability to identify what the predictors and dependent variables have in common. Such a connection may come from the participant themselves or wording of the questionnaire. Although Podsakoff et al. (2003) argue that this can be achieved by obtaining information regarding predictors from one source and information on dependent variables from another source; the authors recognise that this is not always possible. It is argued that other methods involve 1) psychologically separating the measurement of variables; 2) assuring participants of anonymity or

reduce concerns about evaluation; 3) counterbalancing questions order; 3) improving scale items.

To address the first method, the researcher created a psychological separation. This was achieved by making it appear as if the predictors were not related to the dependent variables. Before completing the questionnaire, participants read a passage stating ;' *We are conducting a study which is interested in primary school teachers' experiences of working with children with intellectual difficulties and how these experiences vary between different teachers'*. This did not allow participants to be aware that the questionnaire was measuring cognitions in relation to their reported behaviour. They were also informed that '*Some of the questions may appear similar but please answer each of them without considering any of your previous responses'.* To address Podsakoff et al's (2003) second point, participants were informed before starting the questionnaire that it would not be possible to identify them as an individual on the basis of their responses and that there were no right or wrong answers. Podsakoff et al. (2003) argued that this should reduce participants' evaluation apprehension and make them less likely to edit responses to be more socially desirable. To address the next point, the researcher counterbalanced the order of the items which assessed each variable. Podsakoff et al (2003) argued that this reduces the effect of same method biases as it interferes with retrieval cues which are associated with the different items. Finally, the authors argued that method biases can be reduced by carefully constructing the questionnaire items. The TPB measure was piloted (see Chapter 4) to identify and remove ambiguous items.

5.2.3 Measures

TPB measure. Commonly used items were taken from manuals on constructing a TPB questionnaire (Ajzen, 2002a; Fishbein & Ajzen, 2010; Francis et al., 2004). This allowed the measure to conform to the principle of compatibility and to use items similar to those used in health and social settings. A copy of the final questionnaire can be found in Appendix 2. TPB components were measured with respect to three behaviours identified from the literature as important to the inclusion of children with ID: Modifying curricular content; Adapting regular resources; and Adapting pace of instruction. These behaviours were selected as they reflected curricular, resource and instructional adaptations teachers' must make in order to meet the needs of the child (Graham et al., 2008; Kurth & Keegan, 2012; Roy et al., 2013; Scott, Vitale, & Maten, 1998; Swanson, 2001; Yuen et al., 2005). All items described below were asked in relation to each set of behaviours. Scores were then averaged across the sets of behaviours to produce a single score for that component. This approach is recommended by Fishbein and Ajzen (2010). Rather than assessing a single behaviour, it is possible to assess a behavioural category using a representative set of actions. This allowed for a more in-depth measure of teachers' reported inclusive behaviours rather than simply asking questions relating to a vague behaviour such as 'acting inclusively'. Before completing the questionnaire, participants were given the following passage to read;

We are interested in the factors which influence the inclusion of children with intellectual difficulties (ID) in mainstream schools. We would like you to think of the term ID as including children who find it difficult to learn, understand new or complex information, communicate with others and cope independently. This can

include children with a diagnosis of ID, learning difficulties or those who have

difficulties in these areas but do not have a diagnosis.

Components of attitude. Attitudes were assessed by using both instrumental and affective attitude items. An example statement which preceded the adjectives is; 'For me, modifying curricular content when working with pupils with intellectual difficulties over the next two weeks is..' Six bipolar adjective scales tapped into the instrumental attitude component (1= *negative*; 9= *positive*: 1= *unimportant*; 9= *important*: 1= *unnecessary*; 9= *necessary*: 1=*not at all rewarding*; 9= *rewarding*: 1= *a terrible idea*; 9= *a great idea*: 1= *detrimental*; 9= *beneficial*). Six bipolar adjective scales assessed affective attitude (1= *aggravating*; 9= *satisfying*: 1= *unpleasant*; 9= *pleasant*: 1= *unenjoyable*; 9= *enjoyable*: 1= *boring*; 9= *interesting*: 1= *stressful*; 9= *relaxing*: 1= *undesirable*; 9= *desirable*). These anchors were also used to assess attitudes towards the remaining two sets of inclusive behaviours (i.e. adapting regular resources and adapting the pace of instruction for the child). Scores were averaged across the three sets of behaviours to create a mean instrumental attitude and affective attitude score for the behavioural category 'inclusive behaviours'. These items demonstrated high internal reliability as Cronbach's alpha was 0.94 for instrumental attitudes and 0.93 for affective attitude.

A principal axis factor analysis was conducted on the 36 items with Varimax rotation. The Kaiser-Meyer-Olkin (KMO) measure supported the sampling adequacy for the analysis (KMO= 0.90) and all KMO values for individual items were greater than .82 which is well above the acceptable limit of .5 (Field, 2013). Examination of eigenvalues for each factor (must be greater than 1) and the scree plot supported the separation of the two attitude components. Combined, these factors accounted for

54.98% of the variance. The instrumental attitude items loaded only on the first rotated factor and the affective attitude items loaded only on the second (an item loading cut-off value of .30 was used to discriminate between factors).

Components of subjective norm. Subjective norms were assessed using injunctive norm and descriptive norm items for each of the three inclusive behaviours. The items selected were frequently used in TPB research (e.g. Andrykowski, et al., 2006; Chatzisarantis & Hagger, 2007; Elliott & Ainsworth, 2012; Rhodes & Courneya, 2003a). Three items were used to measure injunctive norms; 'Most people who are important to me would want me to modify curricular content when working with pupils with intellectual difficulties over the next two weeks'; 'The people in my life whose opinions I value would want me to modify curricular content when working with pupils with intellectual difficulties over the next two weeks.'; 'I feel under social pressure to modify curricular content when working with pupils with intellectual difficulties over the next two weeks'.

Descriptive norm items included; 'Many teachers modify curricular content when working with pupils with intellectual difficulties.'; 'Of the teachers you know, how many do you think will modify curricular content when working with pupils with intellectual difficulties?'; 'How often do you think that other teachers modify curricular content when working with pupils with intellectual difficulties?' Participants indicated how strongly they agreed or disagreed with each statement on a 9-point Likert scale (1 = '*strongly disagree'*; 9 = '*strongly agree'*). The same questions were asked in relation to the remaining two inclusive behaviours (i.e. adapting regular resources and adapting the pace of instruction for the child).

A mean injunctive norm score and a descriptive norm score was obtained by averaging all items across the three sets of inclusive behaviours. Cronbach's alpha indicated high internal consistency for descriptive norm items ($\alpha= .89$). Although internal reliability was relatively high for injunctive norms ($\alpha= .82$), for all behaviours, the item 'I feel under social pressure to modify curricular content when working with pupils with intellectual difficulties over the next two weeks' was removed (new $\alpha= .93$) as a result of the principal axis factor analysis. This suggested these items did not measure the traditional subjective norm component.

Similar to the attitude scale, the 18 items were subjected to a principal axis factor analysis with Varimax rotation. The KMO measure supported the sampling adequacy for the analysis (KMO= 0.83) and all KMO values for individual items were greater than .65. Examination of eigenvalues for each factor and the scree plot indicated more than two factors. Inspection of the rotated factor loadings showed that the injunctive norm items 'I feel under social pressure to modify curricular content when working with pupils with intellectual difficulties over the next two weeks' loaded onto a separate factor. It was concluded that these items did not successfully measure the injunctive norm construct and were therefore removed. Regardless of this, this analysis supported the separation of injunctive and descriptive norm as two distinct components with these factors (an item loading cut-off value of .30 was used to discriminate between factors) accounting for 51.40% of the variance.

Components of perceived control. PBC was measured using self-efficacy and controllability items. Self-efficacy items included; 'How confident are you that you will be able to modify curricular content when working with pupils with intellectual

difficulties over the next two weeks?' (1= *not confident*; 9= *extremely confident*)'; 'I have the ability to modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1= *strongly disagree*; 9= *strongly agree*); 'To what extent do you see yourself as being capable of modifying curricular content when working with pupils with intellectual difficulties over the next two weeks?' (1= *very incapable*; 9= *very capable*).

The three controllability items were; 'It is completely up to me whether or not I modify curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=*strongly disagree*; 9=*strongly agree*); 'How much personal control do you feel you have over modifying curricular content when working with pupils with intellectual difficulties over the next two weeks' (1=*no control at all*; 9= *complete control*); 'How much will factors outside your control influence whether or not you modify the curricular content when working with children with intellectual difficulties over the next two weeks?' (1=*not at all*; 9=*very much so*). This item was reversed scored. These same questions were asked in relation to the remaining two behaviours (i.e. adapting regular resources and adapting the pace of instruction for the child).

Scores were then averaged across the three sets of behaviours to create a mean self-efficacy and controllability score for the behavioural category 'inclusive behaviours'. Self-efficacy items demonstrated high internal consistency (α=.89). Controllability items, however, were more problematic. Although the items selected have been validated in previous TPB work (Elliott & Ainsworth, 2012; Rhodes & Courneya, 2003c), the current study found low reliability with Cronbach's alpha as low as 0.46. The 'scale if item deleted' analysis suggested the removed of the item

'How much will factors outside your control influence whether or not you modify the curricular content when working with children with intellectual difficulties over the next two weeks?' for each set of behaviours. This was also supported by a principal axis factor analysis.

A principal axis factor analysis was conducted with Varimax rotation on the self-efficacy and controllability items. The KMO measure supported the sampling adequacy for the analysis (KMO= 0.82) and all KMO values for individual items were greater than .62. Examination of eigenvalues for each factor and the scree plot indicated more than two factors. The rotated factor loadings indicated that the items 'How much will factors outside your control influence whether or not you modify the curricular content when working with children with intellectual difficulties over the next two weeks?' were loading onto a separate factor suggesting that this was not measuring the controllability construct. This provided further support for the removal of these items. The analysis supported the separation of self-efficacy and controllability with the two accounting for 40.03% of the variance.

Removing these controllability items increased the internal consistency to .66. While this is lower than Kline's (1999) cut-off of .7, he argued that we should expect some values to be lower than .7 because of the diversity of the constructs. Nunnally (1978) argued that values of .5 are suitable. It should be noted that it is common for research using TPB questionnaires to find controllability to have the lowest Cronbach's alpha coefficients (Beck & Ajzen, 1991; Bozionelos & Bennett, 1999; Cheng, 2015; Collins, & Mullan, 2011; Kovac, Cameron, & Høigaard, 2014).

Behavioural intention. Three items were used to assess behavioural intention towards each of the three inclusive behaviours. These were; 'I intend to modify curricular content when working with pupils with intellectual difficulties over the next two weeks?' (1=*strongly disagree*; 9=*strongly agree*); 'How likely is it that you will modify curricular content when working with pupils with intellectual difficulties over the two weeks?' (1=*extremely unlikely*; 9=*extremely likely*); 'I will try to modify curricular content when working with pupils with intellectual difficulties over the next two weeks.' (1=*not at all*; 9=*very often*). These items are commonly used in TPB literature (Beck & Ajzen, 1991; Elliott et al., 2003; Hrubes et al., 2001) and the current study also supported the reliability of these items (α= .90). Similar to the other TPB components, these questions were also asked in relation to the remaining two behaviours (i.e. adapting regular resources and adapting the pace of instruction for the child). The mean of participants' scores was calculated across the three sets of behaviours and served as a measure of his or her behavioural intention.

Reported inclusive behaviour. Four items measured each set of reported inclusive behaviour (modifying curricular content, adapting regular resources and adapting pace of instruction). These were: 'I have modified curricular content when working with pupils with intellectual difficulties over the past two weeks' (1= *strongly disagree*; 9= *strongly agree*): 'To what extent have you modified curricular content when working with pupils with intellectual difficulties over the past two weeks?' (1= *no extent at all*; 9= *a great extent*): 'How often did you modify curricular content while working with pupils with intellectual difficulties over the last two weeks' (1= *never*; 9= *very frequently*): 'How many days did you modify curricular content when working with pupils with intellectual difficulties over the

last two weeks?' (1= *no days*; 9= *everyday*). These questions were also asked in relation to the remaining two behaviours (i.e. adapting regular resources and adapting the pace of instruction for the child). Similarly to the other components, scores were the averaged across the three sets of behaviours to obtain an overall mean 'reported inclusive behaviours' score. This demonstrated high internal consistency (α=.95).

Pilot study. As discussed in Chapter 4, the TPB measure was piloted using the 'think aloud' protocol (Darker & French, 2009; French et al., 2007). Based on the pilot study findings, small amendments were made to the format of the measure. See Chapter 4 for further information regarding the pilot study rationale, methodology and findings.

Personality. The Big Five Inventory (BFI; Benet-Martinez & John, 1998; John et al., 1991; John, Naumann & Soto, 2008) was used to measure teachers' personality at Time 1. This is a 44-item measure which assesses the core attributes of the Big Five personality traits (John et al., 2008). Conscientiousness scores were calculated using the mean of nine items (e.g. 'I am someone who is a reliable worker'). The scale was found to be reliable α= .83. Extraversion was measured using the mean of eight items such as 'I am someone who is full of energy' and was found to have high internal consistency (α=.86). Neuroticism was assessed using the mean of eight items (e.g. 'I am someone who worries a lot') and produced a Cronbach's alpha coefficient of .80. The mean of ten items was obtained to assess openness, for example, 'I see myself as someone who has an active imagination' (α= .69). Finally, the mean of nine items was used to calculate agreeableness, for example, 'I am someone who is considerate and kind to almost everyone' (α= .72).

Participants reported how much they agreed or disagreed with each statement on a 5-point Likert scale (1= *strongly disagree*; 5= *strongly agree*).

Demographic Information. Participating teachers provided information on gender (female=0, male=1), age, qualifications, special education training (not completed any special education training=0, completed any special education training=1), grade taught, years of experience teaching and if they currently had a child with ID in their class.

5.2.4 Procedure. Ethical approval was obtained for the University of Strathclyde's School of Psychological Sciences and Health Ethics Committee. Following permission from North and East Ayrshire council and then subsequently from head teachers of schools in these authorities, the researcher visited 31 schools to hand in questionnaire packs for each class teacher within each school. At Time 1, each pack contained an information sheet, a consent form, the questionnaire and a blank envelope for teachers to seal his or her completed questionnaire which ensured responses were confidential. Teachers were therefore provided with information about what the study involved before starting the questionnaire. Completion of the questionnaire took approximately 15 minutes. Two schools agreed to use the questionnaire as an in-service day activity while other schools gave teachers a questionnaire pack and asked them to complete this in their own time. Two-weeks after the questionnaires had been administered, the researcher contacted each school to inquire about responses and to arrange a date to collect the completed questionnaire packs.

The link to the online questionnaire was sent out to schools by the Head of Education of South Ayrshire Council. The researcher also posted the link on a teaching forum 'TeachersTalk' and on a primary school teacher social networking group. The online version contained the same information and questionnaire as in the paper copy. Regardless of the method of delivery, all participants were informed that (a) the study was about primary teachers' attitudes and behaviour towards inclusive education and how different teachers' experience this; (b) participation would involve completing two questionnaires, two weeks apart, the first asking questions about personality and beliefs towards inclusion and the second asking questions about inclusive behaviour; (c) there were no right or wrong answers to any of the questions and (d) responses would be used for research purposes only and all information will be kept confidential. Ethical rights were also explained to participants and they were asked to consent to participate before starting the questionnaire.

Two weeks later, on collection of the Time 1 paper questionnaires, the researcher also administered the appropriate number of Time 2 questionnaire packs to each school. Time 2 packs contained the second questionnaire and a debrief form. Again, each pack contained a blank envelope to allow participants to seal his or her completed questionnaire. Completion time was approximately 10 minutes. A further two weeks later, the researcher contacted each school regarding collection and a date was arranged for this. On collection of the Time 2 responses, the researcher gave each head teacher a £20 LovetoShop voucher as a gift to the school as thanks for their participation.

For those who completed the Time 1 questionnaire online, an email was sent to invite them to complete the Time 2 online questionnaire. Similar to the procedure at Time 1, the online version contained the same information and questionnaire as in the paper copy. Regardless of method of delivery, all participants were asked to generate unique identifiers which maintained anonymity. These were then used to match participants' first and second questionnaire responses.

Analyses. Data was analysed using SPSS 22. First, data cleansing was carried out, which involved checking and addressing missing data, computing mean scores for each TPB variable and personality factor and identifying outliers (see details below). For the analysis of Aim 1.1, descriptive statistics and correlations were first generated to provide an initial look at relationships between variables. Multiple regression analyses were then conducted to determine the key predictors of teachers' intentions and reported behaviour. For the analysis of Aim 1.2, again, descriptive statistics and correlations were examined before multiple regressions were run to test the role of personality in the prediction of intentions and reported behaviour. Analyses were also carried out to determine the moderating effect of personality traits on the relationships between the two-component TPB. Finally, mediational analyses were used to determine whether TPB components mediated the relationships between personality and intentions and the relationship between personality and reported behaviour.

5.3 Results Study 1; Aim 1.1; Applicability of TPB in Predicting Teachers' Reported Inclusive Classroom Behaviours for Children with ID.

5.3.1 Preparation of the data.

Missing data. Missing data occurred as a result of participants missing questions or sections of the questionnaires. Little's (1998) Missing Completely at Random (MCAR) test was carried out to check that the data was missing at random. This produced a non-significant Chi-square, X^2 (1198) = 1048.61 *p*=.999, suggesting that there was no systematic reason for missing data. The missing data was inconsequential given that less than 5% was missing for any variable (Schafer, 1999). As a result, any imputation technique can be employed (Tabachnick & Fidell, 2007, 2013). Mean substitution (Field, 2013; Rubin, Witkiewitz, Andre, & Reilly, 2007) was therefore used to replace missing values. This was selected over multiple imputation (MI) because some information is lost when using this technique (standardised beta weights, tolerance statistics and VIF for the pooled regression). MI is also less flexible for mediational analyses (Enders, Fairchild, & Mackinnon, 2013) and is not compatible with Hayes' PROCESS macro. Two participants missed all attitude items within the Time 1 questionnaire. These participants were therefore not included in analyses involving the attitude component of TPB.[3]

Outliers. Z-scores were calculated for all TPB variables at Time 1 and the measure of reported behaviour at Time 2. Scores in excess of 3.29 were identified as outliers. One outlier was identified in respondents to the instrumental attitude, injunctive norm, descriptive norm, controllability, intention, behaviour, conscientiousness and agreeableness scales. These were replaced with a score which equalled a z-score of 3.29. This were calculated by multiplying the standard

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[3] Analyses were also run using multiple imputation (MI) in order to determine how this impacted results. However, results were the same as when missing values were substituted with the mean.

deviation by 3 and then +/- the mean score (Fields, 2009; Tabachnick & Fidell, 2007, 2013).

5.3.2 Descriptive statistics

Table 1 shows means, standard deviations, and bivariate correlation coefficients for the scales used in the study. Means indicated positive instrumental attitudes, injunctive norm, descriptive norm, self-efficacy, controllability, intentions and reported behaviour. Affective attitude generated the lowest mean score. Instrumental and affective attitudes, injunctive norm, descriptive norm and self-efficacy were significantly correlated with intention. Instrumental and affective attitudes, injunctive norm, descriptive norm, self-efficacy and intention were significantly correlated with reported behaviour.

Table 1. *Bivariate Correlations, Means and Standard Deviations of TPB Variables*

	1	2	3	4	5	6	7	8	Mean	S.D
1. IA		.69**	.54**	.23**	.32**	.24**	.57**	.41**	7.79	.97
2. AA			.53**	.09	.41**	.30**	.42**	.28**	6.14	1.08
3. IN				.26**	.32**	.13	.43**	.41**	7.10	1.65
4. DN					.37**	-.12	.49**	.27*	7.31	1.00
5. SE						.29**	.71**	.45**	7.81	.90
6. C							.16	.05	6.43	1.28
7. Intent								.42**	7.90	.99
8. Beh									7.64	1.04

***p<.001. **p <.001. *p <.05. IA=Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE=

Self-efficacy; C= Controllability; Intent= Behavioural intention; Beh =Reported behaviour.

5.3.3 Hypothesis 1.1a: Attitudes (instrumental and affective), subjective norms (injunctive and descriptive norms) and perceptions of control (self-efficacy and controllability) would predict teachers' intentions to use inclusive behaviours.

A multiple linear regression was used to examine the predictive validity of the two-component TPB variables to predict behavioural intentions. Behavioural intentions were included as the dependent variable. Demographic variables (gender, training and years' experience) were entered at Step 1. Instrumental attitudes, affective attitudes, injunctive norm, descriptive norm, self-efficacy and controllability were added at Step 2.

Residual plots and a scatterplot were used to check the distribution of residuals. No issues were detected thus linearity was assumed. To assess multicollinearity, tolerance statistics and the variance inflation factor (VIF) were examined. VIFs greater than 10 and tolerance statistics below .2 indicate a problem (Bowerman & O'Connell, 1990; Field, 2013). All values were within the acceptable levels thus indicating multicollinearity was not an issue within the model. The assumption of independent errors was also met with a Durbin-Watson statistic of 1.92. This value should not be smaller than 1 or greater than 3 (Field, 2013). Consulting Savin and White's (1977) Durbin-Watson Statistic Tables also confirmed that residual terms were uncorrelated. Although one case had a standardised residual greater than 2, running the regression with this case in and repeating with the case out did not change results. Further, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the cut-off points suggesting this was not an issue. Moreover, Stevens (2002) argued that a case should

only be removed when Cook's distance is less than 1. For these reasons, the case was left in.

Regression tables were assessed (see Table 2). The results showed that demographic variables accounted for a statistically significant proportion of the variance (R^2=.08, p= .012). When TPB variables were added to the regression equation, this resulted in a significant increase to R squared (R^2= .64, R^2_{change}=.5, p< .001). Instrumental attitude (β=.31, p< .001), descriptive norms (β=.19 p= .003) and self-efficacy (β=.51 p< .001) were all significant independent predictors of intention. Affective attitude, injunctive norm and controllability were not significant predictors of intentions. None of the demographic variables were significant after the inclusion of TPB components. Thus Hypothesis 1.1a was partially supported at one dimension of attitudes (instrumental attitudes), one dimension of subjective norm (descriptive norm) and one dimension of PBC (self-efficacy) predicted teachers' inclusive intentions.

Table 2. *Two-component TPB Predictors of Intention*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β
1	.08	.08	3.78*		
Gender				-.18*	-.06
Years' Exp				.11	-.04
Training				.16	.08
2	.64	.55	30.81***		
IA					.31***
AA					.04
IN					.02
DN					.19**
SE					.51***
C					-.08

***p <.001, **p<.01, *p <.05. IA=Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE=

Self-efficacy; C= Controllability

5.3.4 Hypothesis 1.1b: Intentions, self-efficacy and controllability would predict teachers' reported inclusive behaviours.

Multiple linear regression was used to examine the importance of intention, controllability and self-efficacy in the prediction of teachers' reported inclusive behaviours. Reported behaviour was included as the dependent variable. Demographic variables (gender, years of experience and training) were entered at Step 1. Intention, self-efficacy and controllability were added at Step 2. Only these TPB variables were included as these are the components which have direct effects on behaviour (Ajzen, 1991).

Data was found to meet the assumptions of multiple regression. Linearity and homoscedasticity were assessed through inspection of the residual plot; no issues were detected. Normal probability plots confirmed errors were normally distributed. Tolerance statistics and VIF were within the acceptable levels indicating that multicollinearity was not an issue. The assumption of independent errors was also met with a Durbin-Watson statistic of 2.24. With regards to checking influential cases, three cases had a standardised residual greater than 2 however, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the cut-off points meaning these were included in the analysis.

At Step 1, demographic variables did not accounted for a statistically significant proportion of the variance (R^2=.03, p= .578). When TPB variables were added to the regression equation, this resulted in a significant increase to R^2 (R^2= .24, R^2_{change}=.21, $p < .001$). Examining the contribution of each predictor, only self-efficacy was a significant independent predictor of behaviour (β=.34, p= .022). This

suggests that when the two-component of perceptions of control are included as distinct components, self-efficacy is more predictive of teacher reported behaviour than intentions. This partially supports Hypothesis 1.1b as self-efficacy predicted teachers' reported inclusive behaviours however, intentions and controllability did not (see Table 3).

Table 3. *Two-component TPB Predictors of Reported Behaviour*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β
1	.03	.03	.66		
Gender				-.11	-.05
Years' Exp				-.07	-.12
Training				.11	-.03
2	.24	.21	6.69***		
Intention					.20
Self-Efficacy					.34*
Controllability					-.01

***p <.001, **p<.01, *p <.05. Years' Exp= Years of teaching experience.

Self-efficacy as a moderator. Given the importance of self-efficacy in the prediction of behaviour, Hayes' (2013) PROCESS macro was used to test the moderating effect of self-efficacy in the relationship between intention and behaviour was examined. This, however, was non-significant; β= -.10, 95% CI [-.36, .17], *t*= -.72, *p*= .476. Self-efficacy did not influence the strength of the intention-behaviour relationship.

5.4 Aim 1.2. To Examine Whether Teacher Personality Impacts Intentions or Reported Behaviour when Utilising the Two-Component TPB.

     5.4.1 Hypothesis 1.2a: Personality traits (conscientiousness, extraversion, neuroticism, openness and agreeableness) would predict teachers' inclusive intentions and reported behaviour.

     Descriptive statistics. Means, standard deviations and bivariate correlations are shown in Table 4. This shows that teachers higher in openness had more self-efficacy towards including children with ID. Correlations also showed that teachers who scored higher on conscientiousness reported more positive affective attitudes, self-efficacy and intentions. There was no correlation between TPB components and extraversion or neuroticism. However, there was a significant relationship between agreeableness and descriptive norm. Further, those higher in openness reported higher self-efficacy towards including children with ID.

Table 4. *Bivariate Correlations, Means and Standard Deviations of Two-Component TPB and Personality Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	S.D
1. IA		.69**	.54**	.23**	.32**	.24**	.57**	.41**	-.03	.14	..02	.13	.01	7.79	.97
2. AA			.53**	.09	.41**	.30**	.42**	.28**	-.01	.19*	.02	.07	-.14	6.14	1.08
3. IN				.26**	.32**	.13	.43**	.41**	-.001	.06	.06	.12	-.09	7.10	1.65
4. DN					.37**	-.12	.49**	.27*	-.04	.13	.06	.22**	.07	7.31	1.00
5. SE						.29**	.71**	.45**	.17*	.19*	.13	.05	-.09	7.81	.90
6. C							.16	.05	-.08	.11	-.12	-.09	-.03	6.43	1.28
7. Intent								.42**	.04	.24**	.07	.07	.10	7.90	.99
8. Beh									.13	.15	.14	.11	-.11	7.64	1.04
9. Open										.01	.24**	.11	-.01	3.68	.49
10. Cons											.18*	.41**	-.33**	4.22	.57
11. Extr												.14	-.36**	3.69	.76
12.Agre													-.22**	4.35	.47
13. Neur														2.59	.74

**p* <.001. **p* <.05. IA=Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE= Self-efficacy;

C= Controllability; Intent= Behavioural intention; Beh= Reported behaviour; Open= Openness. Cons= Conscientiousness. Extr=

Extraversion. Agre=Agreeableness. Neur=Neuroticsim.

To identify whether teacher personality added to the prediction of behavioural intentions to use inclusive teaching practices with children with ID, a multiple regression was used. Demographic variables (gender, training and years' experience) were entered at Step 1. Personality variables (extraversion, neuroticism, openness, conscientiousness and agreeableness) were included at Step 2. Instrumental attitudes, affective attitudes, injunctive norm, descriptive norm, self-efficacy and controllability were then added at Step 3. Linearity of the model was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. No issues were detected thus errors were seen to be normally distributed. The lowest tolerance statistics was .41 and the highest VIF was 2.42 which are within the criteria indicating that multicollinearity was not a problem. Durbin-Watson statistic was 1.84 meaning the assumption of independent errors was also met. Although one case had a standardised residual greater than 2, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the cut-off points.

Results showed that the model accounted for a statistically significant proportion of the variance (R^2=.08, p= .012) at Step 1. Gender (β= -.18 p= .032) was a significant predictor of intention. When personality traits were added to the regression equation, this resulted in a significant increase to R^2 (R^2=.18, R^2_{change}=.10, p= .019). At this Step, gender (β= -.17, p= .05), training (β=.20, p= .022), conscientiousness (β=.22, p= .023), extraversion (β=.19, p= .042) and neuroticism (β=.24, p= .010) were significant predictors of intentions. The inclusion of TPB variables significantly increased R^2 (R^2=.67, R^2_{change}=.49, p< .001). Instrumental attitude (β=.28, p= .001), descriptive norms (β=.17 p= .010) and self-efficacy (β=.50

p<.001) were independent predictors of intention. Affective attitude, injunctive norm and controllability were not significant predictors. Neuroticism was the only personality trait (β=.17, *p*=.008) to significantly predict intentions at this Step. This suggested that the effect of conscientiousness and extraversion on intentions may be mediated by TPB variables. None of the demographic variables were significant after the inclusion of TPB components. See Table 5.

Table 5. *Including Personality in the Prediction of Intentions*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.08	.08	3.78*			
Gender				-.18*	-.17*	-.06
Years' Exp				.11	.12	-.04
Training				.16	.20*	.11
2	.18	.10	2.83*			
Open					-.07	-.04
Consc					.22*	.12
Extr					.19*	.10
Agre					.02	-.08
Neur					.24*	.17**
3	.67	.49	28.85***			
IA						.28**
AA						.06
IN						.04
DN						.17*
SE						.50***
C						-.09

$^{***}p <.001,$ $^{**}p<.01,$ $^{*}p <.05.$ Years' Exp= Years' teaching experience; IA=Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE= Self-efficacy; C= Controllability; Intent= Behavioural intention; Beh= Reported behaviour; Open= Openness. Cons= Conscientiousness. Extr= Extraversion. Agre=Agreeableness. Neur=Neuroticsim.

Personality in the prediction of reported behaviour. A multiple linear

regression was conducted to determine whether personality contributed to the

prediction of teachers' reported inclusive behaviours when working with a child with

ID over and above TPB components. Reported behaviour was regressed on the

demographic variables (Step 1), personality traits (Step 2: extraversion, neuroticism,

openness, conscientiousness and agreeableness) and finally, on intentions, self-

efficacy and controllability (Step 3). The lowest tolerance statistics was .43 and the

highest VIF was 3.36 indicating that multicollinearity was not a problem. Durbin-

Watson statistic was 2.22 meaning the assumption of independent errors was also

met. Linearity was investigated by inspection of residual plots and homoscedasticity

was assessed using the scatterplot. Inspection of these plots suggested that data

violated assumptions of linearity and homoscedasticity which has implications for

significance testing. These problems can be overcome by using more robust methods

such as bootstrapping.

Bootstrapping solves lack of normality by estimating the sampling

distribution from the sample data and does not rely on normality or homoscedasticity

assumptions (Chernick, 2008). This means that the data collected is treated as a

population in which smaller samples are taken. These are known as bootstrap

samples. The parameter of interest is then calculated for each bootstrap sample, a

process which is repeated a 1000 times. Significance values are then generated based

on these calculations. We therefore applied bootstrap techniques when running the

analysis.

Results showed at Step 1, demographic variables did not account for a

statistically significant proportion of the variance (R^2=.03, p=.578). The inclusion of

personality traits also did not significantly increase R^2 (R^2=.07, R^2_{change}=.04, p= .641).

When TPB variables were added, this resulted in a significant increase to R^2 (R^2=.25, R^2_{change}=.18, p= .002). Only self-efficacy was a significant independent predictor of behaviour (β=.36 CI [.01, .71] p= .052). No personality trait therefore added to the prediction of reported behaviour. See Table 6. Note that 95% confidence intervals are reported in parentheses. Confidence intervals and standard errors are based on 1000 bootstrap samples. Hypothesis 1.2a was partially supported. Only one personality trait (neuroticism) added to the prediction of teachers' intentions. No personality trait significantly predicted reported behaviour.

Table 6. *The Role of Personality in the Prediction of Teachers' Reported Inclusive Behaviour*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.03	.03	.66			
Gender				-.32 (-.1.25, .50)	-.46 (-1.34, .56)	-.17 (-.94, .56)
Years' Exp				-.01 (-.03, .01)	-.01 (-.03, .01)	-.01 (-.03, .01)
Training				.22 (-.34, .65)	.18 (-.36, .60)	-.08 (-.67, .40)
2	.07	.04	.64			
Open					.14 (-.35, .67)	-.04 (-.51, .47)
Consc					.03 (-.54, .54)	-.03 (-.64, .51)
Extr					.17 (-.19, .60)	-.001 (-.37, .42)
Agre					.21 (-.37, .72)	.12 (-.46, .65)
Neur					-.001 (-.40, .36)	-.14 (-.46, .12)
3	.25	.18	5.48**			
Intent						.23 (-.16, 65)
SE						.36* (.01, 71)
C						-.01 (-.20, 14)

*** $p < .001$, ** $p < .01$, * $p = .05$. Intent= Intention. SE= Self-efficacy; C= Controllability Open= Openness. Consc= Conscientiousness. Extr= Extraversion. Agre= Agreeableness. Neur= Neuroticism.

5.4.2 Hypothesis 1.2b; Those scoring high on conscientiousness and extraversion would show stronger intention and reported behaviour relationships.

5.4.3 Hypothesis 1.2c: Higher neuroticism scores would relate to a stronger relationship between subjective norms (injunctive and descriptive norms) and intentions. Thus neuroticism would moderate the relationship between subjective norms (injunctive and descriptive norms) and intentions.

Although only neuroticism predicted teachers' intentions, it may be that similar to previous research (see Chapter 3 Section 3.4.2), personality variables moderate the TPB component relationships. Hayes' (2013) PROCESS macro was therefore used to determine whether conscientiousness, extraversion and neuroticism moderated the relationship between the TPB components as expected by Hypothesis 1.2a and Hypothesis 1.2b. A significant moderating effect of conscientiousness in the relationship between intentions and controllability was found (β= -.24, 95% CI [-.47, -.01], t= -2.02, p= .045). Follow up analysis using simple slopes indicated that when conscientiousness is low, there is a significant relationship between intentions and controllability (β= .23, 95% CI [.05, .40], t= 2.50, p= .013). These suggest that there is no significant relationship between controllability and intentions in the regression model as teachers' scores relatively highly on the measure of conscientiousness. No other moderating effects were significant. Hypothesis 1.2b and Hypothesis 1.2c were not supported.

5.4.4 Hypothesis 1.2d: TPB components would have mediational effects in the relationships between personality and intention.

Hayes' (2013) PROCESS macro was used to examine the mediational effects of TPB components in the relationships between personality-intention and personality-behaviour. Although Baron and Kenny's (1986) seminal paper "Moderator-mediator variables distinction in social psychological research: Conceptual, strategic, and statistical considerations," has been commonly used to inform the steps of moderation or mediational analysis, recently, it has received criticism with regards to the usefulness of the procedure (Field, 2013; Hayes, 2013; Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001; Tang, Yu, Crits-Christpoh, & Tu, 2009; Zhao, Lynch, & Chen, 2010). It is argued that Baron and Kenny's method does not quantify the indirect effect or require an inferential test relating to this. Instead, the existence of an indirect effect is based on the outcome of a set of null hypotheses. Further, Hayes (2013) argues that soon, research will not be published if Baron and Kenny's procedures are adopted. Instead, Hayes developed the PROCESS command to perform these analyses which involves bootstrapping methodology. This is now the most efficient way to examine moderation and mediational effects (Field, 2013) and for this reason, was implemented to examine the influence of intention.

Two analyses were run for each of the personality variables: one tested the mediation effects of instrumental and affective attitudes, injunctive and descriptive norms, and self-efficacy and controllability in the personality-intention relationship and another tested the mediational role of intentions, self-efficacy and controllability in the personality-behaviour relationship. The results showed that conscientiousness had an indirect effect on intentions through self-efficacy (β= .16, BCa CI [.005, .15], κ^2= .15, 95% BCa CI [.04, .28]) and descriptive norm (β= .05, BCa CI [.03, .32], κ^2= .06, 95% BCa CI [.004, .14]). Teachers' who reported higher levels of

conscientiousness had more positive self-efficacy and descriptive norms. This in turn related to stronger intentions to act inclusively. Further, instrumental attitude ($\beta= .08$, BCa CI [.006, .21], $\kappa^2= .08$, 95% BCa CI [.006, .17]) and descriptive norm ($\beta= .12$, BCa CI [.04, .27], $\kappa^2= .12$, 95% BCa CI [.03, .20]) mediated the agreeableness-intention relationship. Teachers higher in agreeableness reported more positive instrumental attitudes and descriptive norms which was then associated with more positive intentions. Hypothesis 1.2d was therefore partially supported.

5.4.5 TPB variables as predictors of teachers' self-efficacy beliefs when working with children with ID.

Given that the findings indicated the importance of self-efficacy, rather than intention, in the prediction of teachers' reported behaviour, it was important to consider what predicted this variable. To examine this, TPB variables which predicted self-efficacy were next investigated. This aimed to further the understanding of what beliefs impact teachers' self-efficacy.

Multiple regression was used to examine which of the TPB components predicted self-efficacy. Self-efficacy was included as the dependent variable. Demographic variables (gender, training and years' experience) were entered at Step 1. Instrumental attitudes, affective attitudes, injunctive norm, descriptive norm, self-efficacy and controllability were added at Step 2. Linearity was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. No issues were detected thus errors were seen to be normally distributed. The lowest tolerance statistic was .62 and the highest VIF was 2.20 indicating that all values were within the acceptable limits and multicollinearity was not a problem.

Examining influential cases, two cases had a standardised residual greater than 2. Despite this, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios indicated that these were not a cause of concern. The assumption of independent errors was also met with a Durbin-Watson statistic of 1.89.

Once confirming that the assumptions of multiple regression had been met, regression tables were examined (see Table 7). This showed that at Step 1, demographic variables account for a statistically significant proportion of the variance (R^2=.13, p = .001) in self-efficacy. Examining individual predictors, this showed that years of teaching experience had a significant independent effect of self-efficacy (β= .31, p < .001). When TPB variables were added to the regression equation, this resulted in a significant increase to R^2 (R^2= .36, R^2_{change}=.24, p < .001). Years of teaching experience remained a significant independent predictor (β= .30, p < .001) in addition to instrumental attitude (β= .25, p= .019), descriptive norm (β= .30, p < .001) and controllability (β= .25, p= .002). The model was run with a third step which incorporated the five personality traits; these had no significant effect on the prediction of self-efficacy. The findings demonstrated that teachers' instrumental attitude, descriptive norm, controllability and year's teaching experience were related to their self-efficacy beliefs towards working with children with ID. Based on the findings from Study 1b, these self-efficacy beliefs in turn influence reported behaviour. This suggests a mediation model which was then tested.

Table 7. *TPB Predictors of Self-Efficacy*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β
1	.13	.13	6.11[**]		
Gender				-.10	.02
Years' Exp				.31[***]	.30[***]
Training				.09	.06
2	.36	.24	9.20[***]		
IA					.25[*]
AA					-.06
IN					.06
DN					.30[***]
C					.25[**]

[***] *p* <.001, [**] p<.01, [*] *p* <.05. Years' Exp= Years of teaching experience. IA=Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE= Self-efficacy; C= Controllability

Mediation analyses were conducted using Hayes' (2013) PROCESS macro to determine whether self-efficacy mediated the relationship between instrumental attitude, descriptive norm, controllability and behaviour. Results showed instrumental attitude had a significant indirect effect on behaviour through self-efficacy; β= .12, BCa CI [.02, .29], $_K^2$= .12, 95% BCa CI [.03, .29]. Self-efficacy also mediated the relationship between descriptive norm and behaviour β= .14, BCa CI [.03, .33], $_K^2$= .15, 95% BCa CI [.03, .28] and controllability and behaviour β= .07, BCa CI [.004, .17], $_K^2$= .10, 95% BCa CI [.01, .23]. There was also an indirect effect of years teaching experience on behaviour through self-efficacy; β= .01, BCa CI [.001, .02], $_K^2$= .10, 95% BCa CI [.01, .21]. Thus self-efficacy mediates the relationship between instrumental attitude, descriptive norm, controllability and years teaching experience and behaviour (see Figure 3).
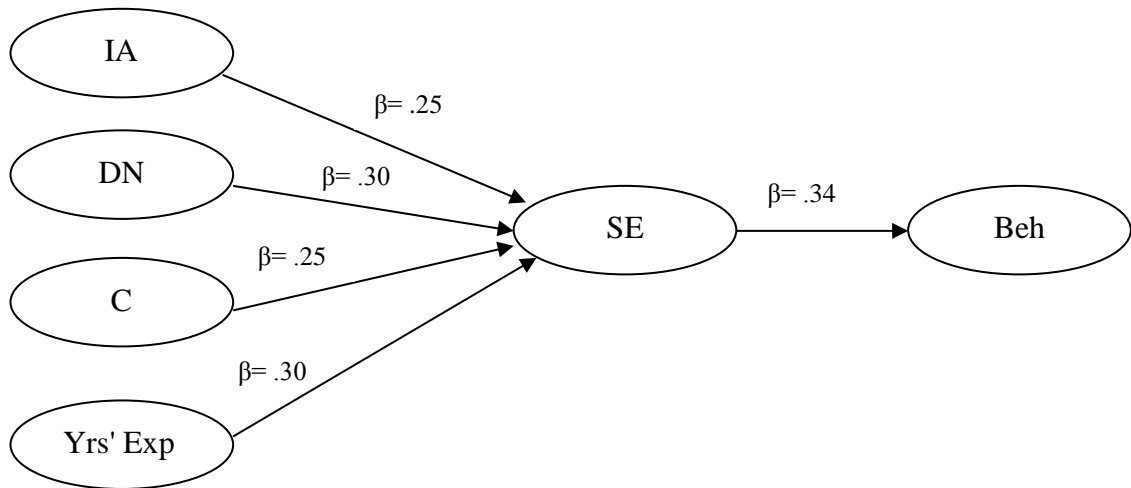
Figure 3. Self-Efficacy as Mediator in the Relationship Between TPB Components and Reported Behaviour.

Years' Exp= Years of Teaching Experience. IA=Instrumental Attitude; DN= Descriptive Norm; SE= Self-efficacy; C= Controllability; Beh=Behaviour.

5.5 Discussion Study 1

Study 1 tested the usefulness of the two-component TPB and personality in the understanding of teachers' reported inclusive behaviours when working with children with ID. Results showed that when the two-component TPB is measured; instrumental attitude, descriptive norm and self-efficacy were significant predictors of teachers' intentions to work inclusively. These intentions, however, did not have an independent effect of reported behaviour. The only significant predictor of teachers' reported inclusive behaviour was self-efficacy.

The study then examined the influence of teacher personality on the two-component TPB variables and reported behaviour. This showed that in addition to instrumental attitude, descriptive norm and self-efficacy, neuroticism contributed to the prediction of teachers' intentions. Results also showed that conscientiousness had an indirect effect on intentions through self-efficacy and descriptive norm.

Conscientiousness also had a moderating effect in the relationship between intentions and controllability. These findings will be discussed in the following sections.

5.5.1 The predictive strength of the two component TPB.

The results demonstrated that when the two-component TPB is implemented, one dimension of each of the original components (attitude, subjective norm, PBC) is important in the understanding of intentions. Specifically, instrumental attitude, descriptive norm and self-efficacy were significant predictors of teachers' intentions to include children with ID in their classroom. Thus teachers who had a positive instrumental attitude, perceived other teachers to be acting inclusively and believed they have the ability are more like to have the intention to work inclusively.

The study provides further support for the importance of self-efficacy within an educational setting and, in particular, for working with children with ID. In the formation of intentions, it seems that teachers look to their own perceived competence. Consistent with previous findings, self-efficacy had the strongest relationship with intention to act inclusively (Brady & Woolfson, 2008; Sharma et al., 2012; Woolfson & Brady, 2009). Our findings echoed those of research which has demonstrated that when different dimensions of PBC (self-efficacy and controllability) are measured, it is the former which is most important (Pertl et al., 2010; Rhodes & Courneya, 2003c).

Teachers' instrumental attitude was a stronger predictor of inclusive intentions than affective attitude. This is in contrast to studies within health and social settings which have found affective attitudes to be more predictive of intentions (Kraft et al., 2005; Rise et al., 2008). This difference may relate to the

target behaviour. We examined work behaviour whereas the focus in health and social settings is commonly behaviours that have personal benefits or consequences (exercising or smoking). Affective attitudes may not predict intentions for work behaviours because the behaviour still needs to be performed, regardless of the individual's emotions. Instrumental attitudes may be important as these involve the consideration of the perceived benefits of the behaviour for the student, the school and the individual's professional reputation (Yan, 2014; Yan & Cheng, 2015). Teachers may place more weight on these beliefs because these show which actions will have optimal outcomes.

Perceptions about colleagues' inclusive teaching (i.e. descriptive norm) also predicted teacher intentions. Teachers were more likely to intend to act inclusively if they believed that this was typical behaviour of staff. This supports previous research showing descriptive rather than injunctive norm predicted intention (Manning, 2009; Rivis & Sheeran, 2003). This may also explain previous inconsistent findings on the role of subjective norm in teaching behaviours (e.g., Ahmmed et al., 2014; Alhassan, 2012; Batsiou et al., 2008; MacFarlane & Woolfson, 2013; Yan & Sin, 2014). Our results suggest that teachers were not influenced by whether they believe others want them to perform the behaviour as measured by the injunctive norm items. Instead, the pressure may come from beliefs that others perform the behaviour.

From a theory development perspective, such findings offer insight into the role of subjective norm in teachers' reported behaviours as this has generated inconsistent results within the literature with some showing this does predict intentions and others failing to support this relationship (Ahmmed et al., 2014; Alhassan, 2012; Batsiou et al., 2008; MacFarlane & Woolfson, 2013; Taylor & Yun,

2012; Yan & Sin, 2014). The present study suggests that teachers' are not influenced by the traditional injunctive norm concept, that is, whether they believe others want them to perform the behaviour. Instead, the pressure comes from beliefs that others are performing the behaviour. Future research should take this into consideration when designing measures of subjective norm to examine teacher behaviour.

The study demonstrated that intention was not a significant predictor of teachers' reported classroom behaviour, a finding that is inconsistent with TPB (Ajzen, 1991). The lack of a link between intentions and behaviour has implications for TPB. This infers that the theory may not apply directly to the examination of teacher reported behaviours, at least in the context of working with children with ID. The results found self-efficacy, rather than intention, to be an important predictor of reported behaviour. Teachers' perception of their own capabilities was the most important predictor of their reported inclusive behaviour

There are a number of possible explanations for why this is the case. When intention weakly predicts behaviour, PBC (self-efficacy and controllability) can have independent effects on behaviour (Ajzen, 1991). Teachers high in self-efficacy may therefore perform the behaviour without the need to engage in a deliberative thought process involving the intention. An alternative explanation relates to the research which argues that self-efficacy is a motivational variable (Klassen & Tze, 2014; Rhodes & Courneya, 2003c, 2004; Williams & Rhodes, 2014) and that, without efficacy beliefs, effort may not be exerted to perform the behaviour. Self-efficacy may therefore tap both motivation and ability. There is some support for this assertion. For example, Williams & Rhodes (2014) argued that standard self-efficacy items are not conceptually distinct from assessments of motivation (i.e. behavioural

intentions). Further, self-efficacy assessments should be viewed as an alternative assessment of motivation. The current study did not fully support this argument as multi-collinearity was not an issue and both self-efficacy and intentions accounted for different proportions in the variance in behaviour. However, this demonstrates that others are arriving at a similar conclusion: self-efficacy is more than a perceived control variable and may have a motivational aspect.

Another interesting finding relates to the importance of self-efficacy over controllability in the prediction of reported behaviour. Evidence has supported the importance of self-efficacy over controllability in the prediction of behaviour (Elliott & Thomson, 2010; Gwaltney, Metrik, Kahler, & Shiffman, 2009; Park & Gaffey, 2007; Trafimow, Sheeran, Conner, & Finlay, 2002). A possible explanation for the importance of self-efficacy rather than controllability relates to the argument that PBC may not influence behaviour because reports did not reflect actual control. It may be that teachers' perceptions of control over external influences were not accurate whereas perceptions of control over internal factors (i.e. self-efficacy) did accurately reflect teachers' ability to work inclusively.

5.5.2 TPB components as predictors of teachers' self-efficacy.

Given the significance of self-efficacy in teachers' reports of the use of inclusive teaching practices, it was important to investigate what influences these beliefs. The results indicated the importance of instrumental attitude, descriptive norm, self-efficacy, controllability and years' experience in the prediction of teachers' self-efficacy beliefs towards working with children with ID. Further, self-efficacy mediated the relationship between these variables and later reports of

behaviour. This suggests that TPB may operate differently when applied to an education setting and there is a need to use an adapted version of the theory in the prediction of teachers' inclusive behaviours. The following sections discuss these findings in more depth.

The findings demonstrated that descriptive norm and years of teaching experience had the strongest relationship with self-efficacy. This was followed by controllability and finally, instrumental attitudes. Thus teachers who had more years of teaching experience, perceived other teachers to be acting inclusively, had positive instrumental attitudes towards inclusion and believed they had control over external factors were more likely to have higher efficacy beliefs with regards to working inclusively.

The influence of teaching experience on efficacy beliefs has generated equivocal research findings. Several studies have found results consistent with the current research in that there is a positive relationship between efficacy beliefs and experience (Bandura, 1997; Tschannen-Moran et al., 1998). Others, however, have argued that experienced teachers have lower self-efficacy (Dembo & Gibson, 1985; Soodak & Podell, 1994) or that self-efficacy beliefs may change throughout the teaching career (Klassen & Chui, 2010; Woolfolk Hoy & Burke Spero, 2005). This makes it difficult to determine whether years' of experience is beneficial or in fact, detrimental to teachers' self-efficacy beliefs.

Inconsistent findings suggest more complex mechanisms than simply the number of years the individual has been teaching. Indeed, Bandura (1994) argued that it is mastery of experience (i.e. satisfaction with past performance) that is

important and is a possible source of self-efficacy beliefs. Previous studies have supported this, showing that mastery of experience enhances teachers' efficacy beliefs (Bandura, 1997; Tschannen-Moran & McMaster, 2009; Tschannen-Moran, & Woofolk Hoy, 2007). Although these studies have not examined efficacy towards teaching children with ID specifically, the findings may also apply to this context. It may be that years' experience was a significant predictor simply because teachers' with more experience have had more opportunity to gain mastery experience. This in turn enhances efficacy beliefs. The influence of years' experience versus mastery experience is an area for future research.

Experience is not the only possible source of efficacy. Bandura (1986, 1997) argued that efficacy beliefs are developed through four sources of information: verbal persuasion, mastery experience, vicarious experience and psychological state. This suggests the importance of school climate in that, environmental factors such as feedback, support and interaction with other staff members are important in the formation of both self- and collective efficacy (Bandura, 2012; Klassen & Tze, 2014; Pas, Bradshaw, & Hershfeldt, 2012). The findings from Study 1 supported this: the individuals' perceptions of other teachers' behaviour (descriptive norm) and control over environmental factors (controllability) were significant predictors of teachers' self-efficacy. Thus teachers' perceptions of staff members and the school environment can determine their own self-efficacy beliefs. This suggests that if a school climate fosters inclusion, not only in terms of teaching practices but also in the way the school is organised, teachers' own efficacy beliefs may increase. Despite this, little research has examined the relationships between school climate and teacher efficacy beliefs towards inclusion in depth (Tschannen-Moran et al., 1998).

This is an important area of study not only to further understand the sources of self-efficacy but also to inform practice and the organisation of school environments.

The study also found instrumental attitudes to be a predictor of teachers' self-efficacy. This is in line with Bandura's (1986, 1997) argument that self-efficacy can be informed by psychological state such as attitudes and mood. Individuals base his or her degree of confidence on the emotional state experienced when considering the particular behaviour. As a result, success is expected when positive arousal is experienced. Teachers with more positive attitudes will experience higher self-efficacy when considering inclusive teaching practices because ultimately, they are more positive towards this. Britner and Pajares (2006) also argued that negative states contribute to lower self-efficacy.

5.5.3 The role of personality in the two-component TPB

With regards to the prediction of intentions, neuroticism was a significant predictor. The findings indicated that those with high neuroticism had more positive intentions toward including children with ID. As individuals higher on neuroticism are motivated to decrease perceived uncertainty (Johnson, Morgeson, & Hekman, 2012), some teachers may act inclusively in order to overcome anxiety that results from difficult tasks. Indeed, Carroll, Forlin and Jobling (2003) found teachers reported increased comfort the more contact they had with disabled individuals. While research shows that neuroticism predicts teacher burnout and stress (Kokkinos, 2007; Kokkinos, Panayiotou, & Davazoglou, 2005), if teachers are taught how to manage this, neuroticism may actually be beneficial to teachers' work-related intentions. It should be noted, however, that we found a relatively small effect of

neuroticism and more work is needed to support this assertion. Thus with the exception of neuroticism, TPB components are more important in the prediction of teacher intentions than personality traits.

Mediational analysis also demonstrated that descriptive norm and instrumental attitude mediated the relationship between agreeableness and intentions. Thus teachers higher in agreeableness reported more positive instrumental attitudes and descriptive norms which was then associated with more positive intentions. Agreeableness relates to traits important in social interaction (Costa & McCrae, 1985; Digman, 1990; Goldberg, 1992). Thus teachers' high in agreeableness may be more affiliated with other staff within the school meaning that if inclusion is the norm, they will be aware of this. This then influences his or her behavioural intention to use inclusive teaching practices.

In support of previous research (Conner & Abraham, 2001; Davies, Mummery, & Steele, 2010; McEachan et al., 2010), TPB components significantly mediated the relationships between conscientiousness and intention. Teachers high in conscientiousness were more likely to report positive self-efficacy and descriptive norms which then related to inclusive teaching intentions. Individuals high on conscientiousness are typically determined, organised and strive for achievement (John & Naumann, 2010). As a result of this, such individuals expect to succeed (i.e. have higher self-efficacy; Gellatly, 1996). This suggests that conscientiousness positively impacts efficacy beliefs which in turn influence reported behaviour.

An interesting finding relates to the moderating effect of conscientiousness in the relationship between intentions and controllability. This relationship was only

significant for teachers' who are low on this trait. Conscientiousness relates to the amount of self-discipline and control a person exhibits. Individuals high on conscientiousness will be determined, organised and strive for achievement whereas individuals scoring lower on this will be less careful and easily distracted (John, & Srivastava, 1999). Those low on conscientiousness may give more value to the controllability component because this will place the responsibility on environmental factors rather than on themselves when forming their intention.

5.5.4 Implications

Perceptions of colleagues' inclusive teaching was important to individual teachers' own inclusive intentions. This indicates the importance of a school climate which encourages inclusion and suggests a role of the school environment in fostering such beliefs. Providing head teachers with information on the promotion of positive school ethos may be beneficial to inclusive teaching intentions. Further, the importance of self-efficacy in teachers' reported inclusive behaviours suggests that strengthening teachers' self-efficacy beliefs may increase willingness to use inclusive teaching strategies.

The study findings offer insight into the extent to which teachers report using inclusive strategies for children with ID and what beliefs may influence these behaviours. Interventions focusing on ways to enhance teacher attitudes, subjective norms or PBC towards inclusion may be beneficial to teachers' use of inclusive strategies. Although making such recommendations is relatively easy, putting this into practice is more difficult. TPB interventions are often unsuccessful (Chatzisarantis & Hagger, 2005; Hardeman et al., 2002) because changing cognitions

is challenging (Trafimow, 2014). Rather than designing ill-informed interventions, there is a need to understand TPB components in more depth. Further investigations of TPB components may identify ways in which teachers' inclusive behaviour can be enhanced.

5.5.5 Summary

Examining teacher beliefs and reported behaviour towards inclusion is important to ensuring the successful inclusion of children with disabilities in mainstream schools. This was the first study to investigate this issue using the two-component TPB framework and to examine the role of personality. Self-efficacy was the only significant predictor of reported inclusive behaviour, suggesting that it is more important in the prediction of teacher behaviours than behavioural intentions. The findings also highlighted experience, other teachers, the school environment and attitudes to be important in the prediction of self-efficacy. Such findings bring us closer to an understanding of how an intervention to enhance teachers' inclusive teaching practices would be developed. This suggests the need for school leaders to promote an inclusive school climate. Further, teacher education should focus on the development of teacher self-efficacy in working with children with ID. Our findings demonstrate the application of the two-component TPB to the understanding of teacher reported inclusive behaviour. There is, however, room for further examination of the important concepts out with a TPB framework.

Chapter 6 - Study 2: School Ethos and Mastery Experience as Predictors of Teachers' Self-Efficacy Beliefs Towards Using Inclusive Teaching Strategies.

The findings from Study 1 suggested teacher self-efficacy was an important predictor of teachers' reported inclusive behaviours. As such, there is a need for research to focus on this variable. In support of this, Tschannen-Moran and Woofolk Hoy (2007) argued that an in-depth examination of the teacher self-efficacy construct is crucial to understand the sources teachers tap when considering their capacity to teach. Such an investigation would not only have practical implications with regards to teacher education and professional development but may also inform theory in terms of how teacher efficacy beliefs can be changed.

6.1 Teacher Self-Efficacy Beliefs

For a definition of teacher self-efficacy, see Chapter 2 Section 2.4.2. It is common for research to test a unidimensional self-efficacy construct. This makes it difficult to identify which sub-type of teacher self-efficacy is important (Knoblauch & Woolfolk Hoy, 2008; MacFarlane & Woolfson, 2013; Tschannen-Moran & Hoy, 2004). Although research has demonstrated the importance of teacher self-efficacy as a unidimensional construct in its prediction of teaching behaviours, it has been argued that the variable comprises a number of sub-types (Tschannen Moran et al., 1998; Tschannen-Moran and Woolfolk Hoy, 2001): instructional strategies efficacy, classroom management efficacy and student engagement efficacy. Instructional strategies efficacy relates to individuals' beliefs that they can design and implement activities and assessments to aid student learning. Classroom management efficacy refers to perceived ability to maintain an orderly and organised classroom

environment for students. Finally, student engagement efficacy concerns teachers' beliefs about their own competence to ensure that students are involved, and motivated to learn. Study 1 examined teacher self-efficacy within the theoretical framework of TPB, so there is scope now for an in-depth investigation of different types of self-efficacy in relation to inclusion. The purpose is to examine whether each sub-type is influenced by different variables and also whether sub-types have a different effect on behaviour.

Given that teacher self-efficacy beliefs have been shown to be important in the use of inclusive teaching practices, it is crucial to examine what influences these beliefs. However, research examining predictors of teachers' instructional strategies, classroom management and student engagement self-efficacy is sparse (Klassen, Tze, Betts, & Gordon, 2011). In his social cognitive theory (SCT), Bandura (1986, 1994) argued that the individual's environment influences their self-efficacy. Some findings suggest that school environment factors such as feedback, support and interaction with other staff members are important in the formation of teacher self-efficacy beliefs (Bandura, 2012; Klassen & Tze, 2014; Pas et al., 2012; Tschannen-Moran et al., 1998). Further, Tschannen-Moran et al. (1998) argued that it is important to investigate the relationships between school ethos and teacher efficacy beliefs. The findings from Study 1 support this, showing that perceptions of other colleagues (descriptive norm) and external environmental factors (controllability) predicted teachers' self-efficacy.

In addition to this, Bandura (1994, 1997) also argued that mastery of experience is an important source of teacher efficacy beliefs which indicates this variable may too be important in the development of teachers' self-efficacy towards

children with ID. Indeed, years' teaching experience predicted teacher self-efficacy in Study 1. Given the findings from Study 1 and the existing literature, there is a need to examine the role of school ethos and teacher experience in the prediction of teachers' self-efficacy.

6.2 School Ethos

School ethos encompasses the elements of an educational institution's culture that define its values, beliefs and operations. The focus in this thesis is on two key aspects: school climate and collective efficacy as these have previously been found to be predictive of teachers' general self-efficacy and thus may be important to teachers' self-efficacy towards working with children with ID.

6.2.1 School climate*.* School climate concerns the overall feeling within the school, incorporating teacher beliefs regarding interpersonal relationships both within and outside school, teaching practices, organisational structure, norms and values (Allodhi, 2010; Hoy & Miskel, 1987; Kohl, Recchia, & Steffgen, 2013; Van Houtte, 2005). A supportive and positive school climate is one in which the institutional, management, and teacher levels work together and are in harmony towards joint achievable goals (Hoy, Tarter, & Kottkamp, 1991).

School climate factors such as the head teacher's leadership, relationships between teachers and the school's academic emphasis have been shown to influence teachers' overall self-efficacy beliefs about teaching and about coping with student behaviour (Brand, Felner, Seitsinger, Brownell & Pajares, 2008; Collie, Shapka, & Perry, 2012; Devos, Dupeiez, & Paquay 2012; Hoy & Woolfolk, 1993; Mehta, Atkins, & Frazier, 2013; Meristo & Eisenschmidt, 2014; Moore & Esselman, 1994; Pas, et al., 2012; Tschannen-Moran & Woofolk Hoy, 2001; Tsouloupas, Carson, &

Matthews, 2014). Further, teachers are more likely to differentiate instruction, i.e., tailor their teaching strategies and contents to accommodate children of different ability levels, when they believe that this is fostered by the school climate (Allodi, 2010; Roy et al., 2013). The above studies together suggest the importance of school climate beliefs in terms of handling behaviour and differentiation.

School climate may thus be important too for teacher efficacy towards inclusive behaviours with children with intellectual disabilities (ID). Research examining the relation between school climate and teachers' self-efficacy beliefs towards including children with disabilities has indeed reported a relationship between these variables (Weisel & Dror, 2006). It is argued that although school climate is an essential factor in all educational processes, positive school climate is particularly important to the success of inclusive education (Allodi, 2010). Furthermore, factors such as supportive school administration and perceived collegiality with other teachers have been identified as predictive of teacher efficacy (Brownell & Pajares, 1999; Hosford, & O'Sullivan, 2015; O'Toole & Burke, 2013; Roll-Pettersson, 2008).

The generalisability of these studies' conclusions, however, is limited due to methodological issues. For example, Gibson and Demo's (1984) measure of teaching and personal efficacy is commonly used to assess teacher efficacy. This measure has poor psychometric properties (Guskey & Passaro, 1994; Henson, 2002; Tschannen-Moran & Woolfolk Hoy, 2001). Another issue with these studies relates to the argument that teacher efficacy is context specific (Bandura, 1986; Pintrich, & Schunk, 1996). When forming an efficacy belief, consideration of the teaching task and its context are required. Items measuring teacher efficacy should therefore

pertain only to ability to teach children with a disability. It may be the case that teachers have high efficacy for teaching typically developing children but lower efficacy when working with a child with a disability. Indeed, feelings of self-efficacy vary as a function of students' difficulties (Soodak, Podell, & Lehman, 1998). Research tends to measure self-efficacy in this way (O'Toole & Burke, 2013; Roll-Pettersson, 2008; Weisel & Dror, 2006) making it difficult to know what children teachers were referring to when responding to the questionnaire items. There is a need to examine the role of school climate on teachers' self-efficacy towards working with children with ID using more sensitive measures of efficacy.

6.2.2 Collective efficacy. Another element of school ethos is collective efficacy (Bandura, 1986, 1994). Unlike self-efficacy which relates to beliefs about the self, collective efficacy relates to perceptions regarding the ability of a group as a whole to succeed at a particular task. In the present context, this concerns staff perceptions about the level of competency of the school as a whole, i.e., what teachers believe about the capabilities of their school staff as a group, rather than their beliefs in themselves individually. Collective efficacy is also associated with task performance, level of effort, student achievement (Goddard, 2002; Goddard, Hoy, & Woolfolk Hoy, 2000; Tschannen-Moran & Barr, 2004) and can impact teachers' self-perceptions (Goddard & Goddard, 2001; Viel-Ruma, Houchins, Jolivette, & Benson, 2010). Despite this, collective efficacy is considerably under-studied. In a review of the literature, Klassen et al. (2011) found that 93% of the studies reviewed examined teacher self-efficacy and only 7% measured collective efficacy. Examining this in addition to school climate perceptions would therefore

advance the field by providing a fuller understanding of the role of collective efficacy on teacher self-efficacy beliefs.

Given that collective efficacy influences teachers' individual feelings of ability, it may be that perceptions of school climate are related to collective efficacy and it is this which then influences the individual's own self-efficacy. This has yet to be studied. Not only would this advance the field in terms of a fuller understanding of the relationship between school climate and teachers' efficacy beliefs toward inclusion of children with ID but may also inform intervention in terms of identifying school environment factors which are important in the development of teachers' efficacy beliefs. This extends previous findings by identifying possible sources of teacher efficacy and thus what should be changed within schools to promote efficacy beliefs among teachers.

6.3 Mastery Experience

In addition to school ethos, Study 1 also found the number of years of teaching experience to be a significant predictor of teacher self-efficacy. The need to investigate this further than simply asking teachers to report the number of years they had been teaching was acknowledged. Morris, Usher and Chen (2016) argued that years' teaching experience on its own cannot convince teachers of their ability. It may be that the more years teaching experience the individual has, the higher the probability that they will have worked with a child with ID in the past and thus this experience can be used to inform future teaching practices. As such, it is important to understand the nature of teachers' experiences rather than simply the number of years working in the job. SCT argued that mastery of experience, that is, experiencing success in a previous performance of a given task, is important and is a

possible predictor of self-efficacy beliefs. Previous studies have supported this, showing that mastery of experience is an important source of teacher efficacy beliefs (Bandura, 1997; Poulou, 2007; Tschannen-Moran & McMaster, 2009; Tschannen-Moran, & Woofolk Hoy, 2007). However, these studies have not examined mastery with respect to teacher self-efficacy towards teaching children with ID specifically and again, have not examined its impact of each sub-type of teacher self-efficacy. Given that Study 1 found self-efficacy impacts teaching practices, it may be that this variable mediates the relationship between mastery experience and reported behaviour. This, however, has not been previously investigated as suggests an interesting area of study.

6.4 Aims and Hypotheses

The current study builds on the findings from Study 1 by examining sources of teacher efficacy in relation to teaching children with ID as these beliefs were found to be the most important predictor of inclusive teaching practices. The present study examined whether school ethos (perceptions of school climate and collective efficacy) and mastery experience could predict teacher self-efficacy beliefs (instructional strategies, classroom management and student engagement) in relation to teaching children with ID. Such an investigation would bring us closer to understanding how teachers' self-efficacy beliefs are fostered and ultimately, how these may be increased. Little research has attempted this despite the growing appreciation of the importance of efficacy in a teaching context. Findings will have implications for current teaching practices, professional development opportunities and initial teacher training. To carry out such an investigation, teacher self- and collective efficacy, perceptions of the school climate and mastery experience were

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assessed. The study also measured teachers' reports of inclusive behaviours for children with ID in order to test the relationship between this and self-efficacy beliefs.

Study 2 had three main aims. The first (Aim 2.1) was to identify relationships between mastery experiences, school ethos (perceptions of school climate and collective efficacy) and teacher self-efficacy in relation to teaching children with ID. The second aim (Aim 2.2) was to assess the relationship between teacher self-efficacy sub-types and reported inclusive classroom behaviours. Finally, as teacher self-efficacy predicts reported behaviour, Aim 2.3 was to examine the mediating role of self-efficacy in the relationship between mastery experience and reported behaviour and school ethos (collective efficacy and school climate) on reported behaviour. Figure 4 below shows the predicted relationships.

- **Hypothesis 2.1a:** Mastery experience, collective efficacy and perceptions of the overall school climate would predict teacher self-efficacy (instrumental strategies efficacy, classroom management efficacy and student engagement efficacy) for working with children with ID.

- **Hypothesis 2.1b**: School climate factors, perceived support from the head teacher, and perceived collegiality among colleagues would predict classroom management, student engagement and instructional strategies self-efficacy.

- **Hypothesis 2.2.** Teacher self-efficacy (instructional strategies, classroom management and student engagement efficacy) would predict reports of using inclusive teaching strategies.

- **Hypothesis 2.3.** Self-efficacy would mediate the relationship between mastery experiences, collective efficacy, perceptions of the school climate and reported inclusive behaviour.
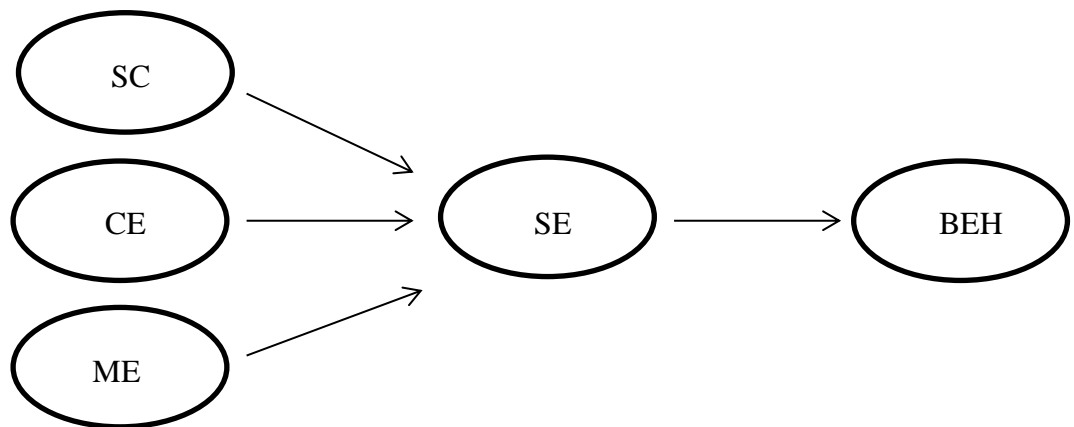
Figure 4. Proposed Model. Self-Efficacy Mediates the Relationships between School Climate Perceptions, Collective Efficacy, Mastery Experience and Reported Behaviour.

SC= School climate perceptions; CE= collective efficacy; ME= Mastery experience; SE= Self-efficacy subtypes (instructional strategies, classroom management, student engagement); Beh=Reported Inclusive behaviour.

6.5 Method Study 2

6.5.1 Participants. Data were collected from 148 Scottish general classroom primary teachers from mainstream schools. This sample size is based on Tabachnick and Fidell's (2007, 2013) participant calculation relevant to multiple linear regression analyses (suggested sample size of 130) and a priori power analysis carried out using G* Power 3.1 (suggested sample size of 118; Faul, et al., 2007;

Faul et al., 2009). The sample comprised 138 females and 10 males. Age ranged from 22 to 65 years (M=37.04, S.D. = 11.37). The mean length of teaching experience was 12.68 years (SD= 10.55) which ranged from participants with 1 years' experience to participants with 39 years' experience.

Recruitment strategy. Four Scottish school districts; East Dunbartonshire, East Renfrewshire, Renfrewshire and North Lanarkshire were contacted in order to obtain permission to contact mainstream primary schools within these authorities about the study. When permission was granted, the researcher sent an initial email to head teachers which introduced the research and asked whether they would allow questionnaires to be distributed to teachers. Where schools responded to this email, the researcher arranged a time and date to take questionnaire packs to the school. If schools did not reply to this email, the researcher prompted the school one week later by telephone, and if head teachers agreed to distribute questionnaires to their staff, a time and date agreed for the researcher to hand questionnaire packs into the school.

6.5.2 Design. This study was cross-sectional with measures administered at one time point only. Self-report questionnaires were used to collect information on demographics, and to measure teacher self-efficacy (instructional strategies, classroom management, and student engagement), collective efficacy, mastery experience, school climate factors (institutional integrity, head teachers' leadership, resource influence, teacher affiliation, academic emphasis) and the use of inclusive classroom behaviours. Design related issues (e.g. CMV and self-report measures) which were discussed in Chapter 5 Section 5.2.2 are also relevant to this study. Similar steps were taken to overcome the issue of CMV.

6.5.3 Measures

Demographic information. Participants were asked to provide information regarding their gender, age, qualifications, special education training, what age group they taught, years of experience teaching, years of experience teaching a child with ID and if they currently had a child with ID in their class.

Teacher self-efficacy. The Teachers' Sense of Efficacy Scale (TSES: Tschannen-Moran & Woolfolk, 2001) was used to measure teachers' self-efficacy towards the inclusion of children with ID. The TSES is a widely used measure of teacher efficacy and good reliability has been reported in several studies (Klassen, & Chiu, 2010; MacFarlane & Woolfson, 2013; Poulou, 2007; Tschannen-Moran, & McMaster, 2009; Wolters, & Daugherty, 2007; Zee, Koomen, Jellesma, Geerlings, & de Jong, 2016).

The 12-item version was used in order to minimize the time demands on participants. The TSES contains three subscales which measure efficacy beliefs towards instructional strategies (four items), classroom management (four items) and student engagement (four items). An example from the instructional strategies scale is "To what extent can you use a variety of assessment strategies?". An example from the classroom management scale is "How much can you do to get children to follow classroom rules?". Finally, an example from the student engagement scale is "How much can you do to get students to believe they can do well in schoolwork?". The present study adapted the scale to measure teacher self-efficacy specifically towards working with children with ID. An example from the adapted scale is' To what extent can you use a variety of assessment strategies for students with ID'.

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Participants respond to items using a 9-point Likert scale ranging from '*nothing at all*' to 'a *great deal*'. Items on all scales showed high reliability; classroom management (α= .88), instructional strategies (α=.84) and student engagement (α= .84). Reliability was also high when all items were summed to provide a total self-efficacy score (α= .93).

A principal axis factor analysis was conducted on the 12 items with Varimax rotation to determine whether the factor structure supported the existence of three factors or one total efficacy factor. The Kaiser-Meyer-Olkin (KMO) measure supported the sampling adequacy for the analysis, KMO= 0.92 and all KMO values for individual items were greater than .89. An initial analysis was run to obtain eigenvalues for each factor in the data. This showed that only one factor had eigenvalues over Kaiser's criterion of 1 accounting for 57.25% of the variance. This suggested the existence of only one total self-efficacy factor.

As recommended by Field (2013), a second principal axis factor analysis with Varimax rotation was then carried out with the option to retain three factors. Examination of eigenvalues for each factor and the scree plot now supported the separation of the three types of self-efficacy. Combined, these factors accounted for 71.39% of the variance. The instructional strategies efficacy items loaded only on the first rotated factor, classroom management efficacy items loaded on the second and the student engagement items loaded on the third factor (an item loading cut-off value of .30 was used to discriminate between factors). It was decided that three factors would be retained to be consistent with Tschannen-Moran and Woolfolk Hoy's (2001) definition.

School climate. The Organizational Health Inventory Elementary (OHI-E;
Hoy et al., 1991) which has been validated in several studies (Bradshaw, Koth,
Bevans, Ialongo, & Leaf, 2008; Henderson et al., 2005; Hoy, Tarter, Woolfolk Hoy,
2006; Hoy & Woolfolk, 1993; Mehta et al, 2013; Pas et al., 2012) was used to
measure teachers' perceptions of the school climate. The instrument contains five
subscales; six items measure institutional integrity (the school's ability to maintain
educational integrity; teachers are protected from unrealistic community and parent
demands); ten items head teacher's leadership (a head teacher who is friendly and
supportive, but also encourages high performance); seven items assess resource
influence (teachers are given adequate classroom supplies and extra instructional
materials can be easily obtained); nine items are used to measure teacher affiliation
(sense of community between teachers); five items assess academic emphasis
(school's push for academic achievement and expresses attainable goals for the
students).

Research has supported the presence of these dimensions when measuring
school climate (Brownell & Pajares, 1999; Daane, Beirne-Smith, & Latham, 2000;
Hoy & Hannum, 1997; Hoy, & Woolfolk, 1993; Pas, et al., 2012). Participants
responded to items using a 4-point Likert scale ranging from '*rarely occurs*' to '*very
frequently occurs*'. Items 6, 8, 14, 19, 25, 29, 30 and 37 were reversed scored.
Internal consistency of items was confirmed for an overall total school climate score
(α=.89), head teacher's leadership (α=.91), resource influence (α=.82), institutional
integrity (α=.67) and teacher affiliation (α=.74). Cronbach's alpha for academic
emphasis, however, was less adequate (α=.52). A principal axis factor analysis was
therefore conducted to investigate this further.

The KMO measure supported the sampling adequacy for the analysis, KMO= 0.85 and all KMO values for individual items were greater than .50. An initial analysis was run to obtain eigenvalues for each factor in the data. Eigenvalues confirmed the presence of five factors which accounted for 53.02% of the variance. The rotated factor matrix showed that the head teacher's leadership items loaded onto rotated factor one only. Teacher affiliation items loaded onto rotated factor two only. Resource influence items loaded onto rotated factor three. Institutional Integrity items loaded onto factor four. All academic emphasis items loaded on rotated factor five with the exception of item six which loaded on a separate factor. This item; 'students neglect to complete homework' does not appear to reflect teacher perceptions of the school's push for academic achievement but may instead reflect student discipline or obedience. This item was therefore removed from the academic emphasis scale. Removal of this item increased the scale's reliability slightly as Cronbach's alpha was still low (α=.58). While this is lower than Kline's (1999) cut-off of .7, he argued that we should expect some values to be lower than .7 because of the diversity of the constructs. Nunnally (1978) argued that values of .5 are acceptable. Nonetheless, caution should be taken when interpreting academic emphasis results.

Collective efficacy. 12-item Collective Teacher Belief Scale (Tschannen-Moran & Barr, 2004) measured teachers' collective efficacy beliefs. This instrument is preferable to other collective efficacy measures because it is most closely related with the self-efficacy construct (Klassen et al., 2011). It comprises two subscales: instrumental strategies (e.g. " How much can teachers in your school do to produce meaningful student learning?") and student discipline (e.g. "To what extent can

school personnel in your school establish rules and procedures that facilitate learning?"). The current study adapted items in order to obtain efficacy views relating to teaching children with ID specifically. For example, 'How much can teachers in your school do to produce meaningful student learning for students with ID?'. Similar to the TSES, participants responded to items using a 9-point Likert scale ranging from '*nothing at all*' to 'a *great deal*'. Cronbach's alpha coefficients supported the internal consistency of the instructional strategies scale (α=.90), the student discipline scale (α=.89) and a total collective efficacy score, produced when all items were summed (α=.94).

A principal axis factor analysis was conducted on the 12 items with Varimax rotation to determine whether the factor structure supported the existence of two factors or one total collective efficacy factor. The KMO measure supported the sampling adequacy for the analysis, KMO= 0.91 and all KMO values for individual items were greater than .87. An initial analysis was run to obtain eigenvalues for each factor in the data. This showed that two factors had eigenvalues over 1 accounting for 67.77% of the variance and suggested the existence of two collective efficacy factors. Examining the rotated factor matrix showed that all items loaded onto both factors with most loading highly on factor one. The factor structure argued by Tschannen-Moran and Barr (2004) was therefore not supported. Based on these findings, it was decided that only the total collective efficacy score would be utilised.

Mastery experience. Mastery experience was measured by asking participants to rate their satisfaction with their professional performance when working with children with ID this year from 1=*poor* to 9=*excellent*. It should be noted that no established scale for this measure in a teaching context currently exists.

While the reliability of single item measures has been debated, support nonetheless exists for the use of single item measures to assess a range of psychological constructs (Loo, 2002; Robins, Hendin, & Trezesniewksi, 2001; Wanous, Reichers, & Hudy, 1997) including teachers' mastery experience (Tschannen-Moran & Woofolk Hoy, 2007). Further, using one item minimised the time taken for teachers to complete the questionnaire.

Reported inclusive behaviour. Teacher reported behaviour was measured using the Differentiated Instruction Scale (DIS; Roy et al., 2013) which assesses the use of instructional adaptations (8 items; e.g. 'Plan different assignments to match students' abilities') and academic progress monitoring strategies (4 items; e.g. Evaluate the effectiveness of teaching adjustments (e.g. monitor subsequent achievement and progress) in general education classrooms'.) Roy et al. (2013) found high reliability of both instructional adaptations items ($\alpha=.86$) and academic progress ($\alpha=.74$). As the DIS is a relatively new measure, there has been little research so far that has utilised the scale. Despite this, given the high internal consistency reported by Roy et al. (2013) and the adaptability of the items to relate to teaching children with ID, the scale was deemed most appropriate. Participants responded using a 5-point Likert scale, ranging from 1=*never* to 5=*very frequently*. Questions were adapted to relate only to behaviours when working with children with ID. In Study 1, different inclusive behaviours were averaged together to create an overall behaviour score which incorporated several aspects of important inclusive classroom behaviours. For this reason, we summed all items together to provide an overall inclusive behaviours score ($\alpha=.86$).

6.5.4 Procedure. Ethical approval was obtained from University of Strathclyde School of Psychological Sciences and Health Ethics Committee. Following permission from East Dunbartonshire, East Renfrewshire, Renfrewshire and North Lanarkshire councils and then subsequently head teachers from schools within these authorities, the researcher visited 42 schools to hand in questionnaire packs for each class teacher within each school. Each pack contained an information sheet, a consent form, the questionnaire, a debrief sheet and two blank envelopes. One envelope instructed the participant to seal the consent form and the other instructed the participant to seal the completed questionnaire. These ensured responses were anonymous as consent forms were separated from responses. Participants read the information sheet and gave informed consent before starting the questionnaire.

Two weeks after the questionnaires were delivered, the researcher contacted each school to enquire about responses and to arrange a date to collect the completed questionnaire packs. Where many teachers within a school had completed questionnaires, the researcher gave a £20 voucher as a gift to the school. Where fewer teachers had completed questionnaires, chocolates and a thank you card were given to the school. This made best use of the budget for thanking participants.

Analyses. Data were analysed using SPSS 22. Before running analyses, the researcher cleaned up the data. This involved computing mean scores for variables, checking and addressing missing data and identifying outliers (details provided below). For Aim 2.1, 2.2 and 2.3, descriptive statistics and correlations were calculated for initial examination of relationships between variables. For Aim 2.1 and to test Hypothesis 2.1a, multiple regression analyses were conducted to determine

whether school ethos (collective efficacy and teachers' perceptions of the overall school climate) and mastery experience predicted self-efficacy. Another multiple regression analysis then tested Hypothesis 2.1b by examining which individual school climate factors predicted self-efficacy beliefs. To test Aim 2.2 and Hypothesis 2.2., multiple regression analyses were used to examine the predictive strength of the sub-types of self-efficacy on teacher inclusive classroom behaviour. Aim 2.3 and Hypothesis 2.3 was examined by testing the mediating role of self-efficacy in the relationship between mastery experiences, collective efficacy, perceptions of the school climate and reported inclusive behaviour.

Unit of analysis. As the researcher was interested in the influence of perceptions of school climate on teacher-level variables (efficacy beliefs), individual teacher scores were used as the unit of analysis on all variables rather than school level analyses. This strategy is often employed when examining the impact of school climate on individual-level outcomes (Brownell & Pajares, 1999; Collie et al., 2012; Çalik, Sezgin, Kavgaci, & Kilinc, 2012; Devos et al., 2012; Foley & Murphy, 2015; Guo, Justice, Sawyer, Tompkins, 2011; Hoy & Woolfolk, 1993; Mehta et al.,2013; Meristo, & Eisenschmidt, 2014; Pas et al., 2012; Roll-Petterson, 2008; Soodak et al., 1998; Tsouloupas et al., 2014).

School level analyses involve the use of multi-level modelling techniques. Hierarchical Linear Modelling (HLM) was initially used to test whether school-level variables (overall school scores on OHI-E and local authority) influenced teachers' self- and collective efficacy or inclusive classroom behaviour scores. Steps to run the analysis were taken from Raudenbush and Bryk (2002): Woltman, Feldstain, MacKay and Rocchi (2012). These analyses were not significant which suggested

that there were no relationships between school-level predictors and outcome variables. This coupled with low intra-class correlations suggested multilevel analyses would not yield different results from a non-multilevel analysis. Further, multi-level modelling techniques are more commonly applied when the outcome variable is at the school level (i.e. student achievement; Wang, & Degol, 2015). This supported the decision to examine individual teacher scores only.

6.6 Results Study 2: Aim 2.1. Relationships between Mastery Experiences, School Ethos (Perceptions of School Climate and Collective Efficacy) and Teacher Self-Efficacy

6.6.1 Preparation of the data

Missing data. Missing data occurred as a result of participants missing items or sections of the questionnaire. Little's (1998) MCAR tested that the data were missing at random. This was non-significant X^2 (259) = 194.47 *p*=.999, suggesting that there was no systematic reason for missing data. Where less than 5% of data is missing for any variable any imputation technique can be employed to address this (Rubin et al., 2007; Schafer, 1999; Tabachnick & Fidell, 2007, 2013). Mean substitution was therefore used to replace missing values[4]. See Chapter 5, Section 5.3.1 for reasons why this was selected over MI.

Outliers. Z-scores were calculated for all variables and scores in excess of 3.29 were identified as outliers. Two outliers were identified in respondents to the head teacher leadership subscale of the OHI and one outlier in respondents to the

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[4] Analyses were also run using multiple imputation (MI) in order to determine how this impacted results. However, results were the same as when missing values were substituted with the mean.

total inclusive classroom behaviour scale. These were replaced with a score which equalled a z-score of 3.29. This were calculated by multiplying the standard deviation by 3 and then +/- the mean score (Fields, 2009; Tabachnick & Fidell, 2007).

6.6.2 Descriptive statistics

Table 8 shows means, standard deviations, and bivariate correlation coefficients for the scales used in the study. The means suggested that teachers reported relatively high levels of self-efficacy. Scores on mastery experience, collective efficacy and perceptions of school climate were also high. Finally, teachers reported using inclusive teaching strategies frequently, as the mean was 4.54 out of a possible 5. Correlations showed all three types of teacher self-efficacy (classroom management, instructional strategies and student engagement) were significantly correlated with collective efficacy, perceptions of the overall school climate and mastery experience. All three types of teacher self-efficacy were positively correlated with perceptions of head teacher's leadership, resource influence and academic emphasis. Only instructional strategies efficacy was significantly correlated with teacher affiliation. Collective efficacy was correlated with perceptions of overall school climate and each school climate factor. With regards to reported inclusive behaviour, instructional strategies efficacy, collective efficacy, overall perceptions of the school climate and mastery experiences showed significant relationships.

Table 8. *Bivariate Correlations, Means and Standard Deviations of Teacher Self-Efficacy, School Ethos Variables, Mastery Expereince and Reported Behaviour*

	1	2	3	4	5	6	7	8	9	10	11	12	Mean	S.D.
1. CM_SE		72***	6***	62***	09	28***	15	27**	09	29***	21*	43***	.88	.10
2. IS_SE			70***	69***	24**	41***	04	37***	20*	39***	34***	50***	.20	.05
3. SE_SE				67***	15	34***	05	34***	06	37***	19*	35***	.71	.17
4. CE					21*	43***	17*	38***	26**	36**	21*	45***	.98	.05
5. Beh						23**	.07	-15	16	15	19*	31***	.54	40
6. Over SC							32***	84***	67***	75***	45***	23*	.17	34
7. SC_II								003	14	-.01	-.04	-.02	.72	55
8. SC_HT									48***	67	28**	25**	.41	55
9. SC_TA										33***	30***	11	.46	40

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10. SC_RI	.55	.38***	.18*	.94	55
11. SC_AE		22**	.00		45
12. ME			.93		99

6.6.3 Hypothesis 2.1a: Teachers' mastery experience, collective efficacy and perceptions of the overall school climate will predict self-efficacy.

Three multiple linear regressions were conducted to determine whether mastery experience and school ethos (perceptions of the school climate, and collective efficacy) predicted each type of self-efficacy (classroom management, instructional strategies and student engagement) belief. For each of these, demographic variables (gender, years of experience and training) were entered at Step 1. Mastery experience was added at Step 2 given that previous research has found this to be the most important predictor of self-efficacy (e.g. Bandura, 1997; Poulou, 2007; Tschannen-Moran & McMaster, 2009; Tschannen-Moran, & Woofolk Hoy, 2007). Overall perceptions of school climate were added at Step 3 and collective efficacy at Step 4.

For all models, data were found to meet the assumptions of multiple regression. Linearity was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. No issues were detected thus errors were seen to be normally distributed. Multi-collinearity was assessed using tolerance statistics and VIF, all of which were within the cut-off points. Cut-off points were specified in Chapter 5 Section 5.3.3. Durbin-Watson statistics showed that errors were independent. Standardised residual, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the acceptable ranges for each model, suggesting there were no influential cases.

Results of the regression showed that for classroom management and instructional strategies efficacy, both mastery experience and overall perceptions of

the school climate were significant predictors (see Tables 9 and 10). However, when collective efficacy was added to the model, only this and mastery experience predicted these efficacy beliefs; overall perceptions of the school climate were no longer significant. This suggested collective efficacy may mediate the relationship between school climate perceptions and efficacy beliefs. For student engagement efficacy, mastery experience and overall perceptions of the school climate were significant predictors until collective efficacy was added. At this Step, only collective efficacy predicted student engagement efficacy (see Table 11). For all sub-types of efficacy then, teachers who believed in the capabilities of their teaching colleagues as a group had higher self-efficacy for working with children with ID. This partially supports Hypothesis 2.1a.

Table 9. *Predicting Classroom Management Self-Efficacy with Mastery Experience and School Ethos Variables*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.05	.05	2.60[*]				
Gender				.03	.02	.02	.04
Years' Exp				-.01	-.03	-.03	.02
Training				.23[**]	.14	.12	.13
2	.20	.15	26.34[***]				
Mastery Exp					.40[***]	.36[***]	.17[*]
3	.23	.02	3.83[*]				
Over SC						.15[*]	-.03
4	.42	.19	45.37[***]				
CE							.54[***]

[***] $p < .001$, [**] $p < .01$, [*] $p < .05$. Years' Exp= Years of teaching experience; Mastery Exp= Mastery experience; Over SC= Perceptions of overall school climate; CE= Collective efficacy.

Table 10. *Predicting Instructional Strategies Self-Efficacy with Mastery Experience and School Ethos Variables*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.05	.05	2.40				
Gender				-.05	-.05	-.05	-.04
Years' Exp				-.08	-.11	-.09	-.04
Training				.20**	.10	.06	.07
2	.27	.22	42.08***				
Mastery Exp					.48***	.42***	.22**
3	.34	.07	15.58***				
Over SC						.28***	.10
4	.54	.19	57.61***				
CE							.54***

*** $p <.001$, ** $p<.01$, * $p <.05$. Years' Exp= Years of teaching experience; Mastery Exp= Mastery experience; Over SC= Perceptions of overall school climate; CE= Collective efficacy.

Table 11. *Predicting Student Engagement Self-Efficacy with Mastery Experience and School Ethos Variables*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.22	.05	2.37				
Gender				-.09	-.09	-.09	-.08
Years' Exp				-.10	-.12	-.11	-.05
Training				.18*	.11	.08	.09
2	.38	.11	.17.51***				
Mastery Exp					.33***	.28***	.06
3	.45	.05	8.04**				
Over SC						.23**	.10
4	.68	.26	64.15***				
CE							.62***

*** $p <.001$, ** $p<.01$, * $p <.05$. Years' Exp= Years of teaching experience; Mastery Exp= Mastery experience; Over SC= Perceptions of overall school climate; CE= Collective efficacy.

The mediating role of collective efficacy. Given the results of the

regressions, the mediating role of collective efficacy in the relationship between the

different sub-types of teacher self-efficacy and perceptions of the overall school

climate was tested. Mediation analyses were conducted using Hayes' (2013)

PROCESS macro to examine the mediating role of collective efficacy in the

relationship between perceptions of the school climate and self-efficacy beliefs.

Results showed that collective efficacy mediated the relationship between classroom

management efficacy (β= .26, BCa CI [.18, .37]), representing a large effect size

(Preacher & Kelley, 2011) κ^2= .26, 95% BCa CI [.18, .36] instructional strategies

efficacy (β= .27, BCa CI [.19, .37]), κ^2= .29, 95% BCa CI [.19, .38] student

engagement efficacy (β= .28, BCa CI [.19, .39]), κ^2= .29, 95% BCa CI [.20, .39] and

perceptions of the overall school climate. These results imply that teacher

perceptions of the school climate relate to beliefs that staff as a whole are able to

include children with ID and this mediates the relationship between school climate

and teachers' self-efficacy beliefs.

6.6.4 Hypothesis 2.1b: Perceived support from the head teacher and perceived collegiality among colleagues will predict sub-types of self-efficacy.

Given that teachers' perceptions of overall school climate were related to

self-efficacy beliefs towards working with children with ID, it became important to

examine school climate in more depth. To do this, school climate factors were

considered individually in the next regressions rather than grouping these together.

Demographic variables (gender, years of experience and training) were entered at

Step 1. Collective efficacy and mastery experience was added at Step 2. School

climate factors (institutional integrity, head teacher leadership, teacher affiliation, resource influence and academic emphasis) were added at Step 3.

For each regression, assumptions of linearity and homoscedasticity were assessed and confirmed through inspection of the residual plot. Normal probability plots confirmed errors were normally distributed. Tolerance statistics and the VIF confirmed no issues of multicollinearity in the model. The assumption of independent errors was also met with a Durbin-Watson statistic of 1.89. No case had a standardised residual greater than 2.

Classroom management self-efficacy. The results showed (see Table 12) that at Step 1, demographic variables accounted for a statistically significant proportion of the variance (R^2=.05, p= .053.) Training was an independent predictor of classroom management efficacy (β=.23 p=.007). When collective efficacy and mastery experience were added to the regression equation, this resulted in a significant increase to R^2 (R^2= .42, R^2_{change}=.36, p<.001). At this Step, collective efficacy (β=.52 p<.001) and mastery experience (β=.16 p=.029) were significant predictors of classroom management self-efficacy. The inclusion of school climate factors to the regression equation did not result in a significant increase to R^2 (R^2= .66, R^2_{change}=.44, p=.344). Teachers with higher levels of mastery experience and those who believed in the capabilities of their teaching colleagues had higher classroom management self-efficacy for working with children with ID. Thus no school climate factor had an independent effect on teachers' reports of classroom management efficacy.

Table 12. *Including School Climate Factors as Predictors of Classroom Management Self-Efficacy*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.05	.05	2.60[*]			
Gender				.03	.04	.01
Years' Exp				-.01	.02	.02
Training				.22[**]	.13	.12
2	.42	.36	43.11[***]			
CE					.52	.51[***]
Mastery Exp					.16	.16[*]
3	.44	.02	1.14			
SC_II						.08
SC_HT						.01
SC_TA						-.14
SC_RI						.06
SC_AE						.08

[***] $p < .001$, [**] $p < .01$, [*] $p < .05$. Years' Exp= Years of teaching experience; Mastery Exp= Mastery experience; CE= Collective efficacy; SC_II= Institutional Integrity; SC_HT= Head teacher's leadership; SC_TA= Teacher affiliation; SC_RI= Resource Influence; SC_AE= Academic Emphasis.

Instructional strategies self-efficacy. The results showed (see Table 13) that at Step 1, demographic variables did not account for a statistically significant proportion of the variance (R^2=.05, p= .071). When collective efficacy and mastery experience were added to the regression equation, this resulted in a significant increase to R^2 (R^2= .53, R^2_{change}=.48, p<.001). Both collective efficacy (β=.58 p<.001) and mastery experience (β=.22 p=.001) were significant predictors of instructional strategies efficacy at this Step. The inclusion of school climate factors significantly increased R^2 (R^2= .57, R^2_{change}=.04, p=.030). At this Step, collective efficacy (β=.54 p<.001), mastery experience (β=.19 p=.006) and academic emphasis (β=.17 p=.009) were significant predictors. Teachers who reported more mastery experience,

believed in the capabilities of the staff and who perceived that the school pushed for

academic achievement reported higher levels of instructional strategies efficacy for

working with children with ID.

Table 13. *Including School Climate Factors as Predictors of Instructional Strategies Self-Efficacy*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.05	.05	2.40			
Gender				-.05	-.03	-.05
Years' Exp				-.08	-.04	-.01
Training				.20*	.09	.08
2	.53	.48	70.61***			
CE					.58***	.54***
Mastery Exp					.22**	.19**
3	.57	.04	2.56*			
SC_II						-.02
SC_HT						.03
SC_TA						-.08
SC_RI						.08
SC_AE						.17**

*** $p < .001$, ** p<.01, * $p < .05$. Years' Exp= Years of teaching experience;

Mastery Exp= Mastery experience; CE= Collective efficacy; SC_II= Institutional

Integrity; SC_HT= Head teacher's leadership; SC_TA= Teacher affiliation; SC_RI=

Resource Influence; SC_AE= Academic Emphasis.

Student engagement self-efficacy. The results showed (see Table 14) that at

Step 1, demographic variables did not account for a statistically significant

proportion of the variance (R^2=.05, p= .073). When collective efficacy and mastery

experience were added to the regression equation, this resulted in a significant

increase to R^2 (R^2= .46, R^2_{change}=.41, $p<.001$). At this step, only collective efficacy

(β=.62 $p<.001$) was a significant predictor of teachers' student engagement efficacy.

When school climate factors were added to the regression equation, this resulted in another significant increase to R^2 (R^2= .51, R^2_{change}=.05, p=.024). At this Step, collective efficacy (β=-.61 p<.001) and teacher affiliation (β=-.23 p=.002) were predictors of teachers' student engagement self-efficacy beliefs. Teachers who perceived the staff as a whole to be capable reported higher levels of student engagement efficacy for working with children with ID. Further, teachers who reported higher levels of teacher affiliation reported lower levels of student engagement efficacy. Hypothesis 2.1b was therefore not supported.

Table 14. *Including School Climate Factors as Predictors of Student Engagement Self-Efficacy*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.05	.05	2.37			
Gender				-.09	-.08	-.09
Years' Exp				-.10	-.05	.003
Training				.18[*]	.09	.08
2	.46	.41	51.70[***]			
CE					.62[***]	.61[***]
Mastery Exp					.06	.03
3	.51	.05	2.69[*]			
SC_II						-.01
SC_HT						.09
SC_TA						-.23[**]
SC_RI						.12
SC_AE						.05

[***] *p* <.001, [**] p<.01, [*] *p* <.05. Years' Exp= Years of teaching experience; Mastery Exp= Mastery experience; CE= Collective efficacy; SC_II= Institutional Integrity; SC_HT= Head teacher's leadership; SC_TA= Teacher affiliation; SC_RI= Resource Influence; SC_AE= Academic Emphasis;

6.7 Aim 2.2. Relationship between Teacher Efficacy and Reported Inclusive Classroom Behaviours.

6.7.1 Hypothesis 2.2. Each sub-type of teacher self- efficacy would predict the use of inclusive teaching strategies.

Multiple regression analyses were used to test the predictive strength of efficacy beliefs (instructional strategies, classroom management and student engagement) on teacher inclusive classroom behaviour. Demographic variables (years of experience and training) were entered at Step 1. Self-efficacy sub-types were added at Step 2 (classroom management, instructional strategies efficacy, student engagement efficacy). Collective efficacy was added at Step 3. Linearity was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. Inspection of these plots suggested that data violated assumptions of linearity and homoscedasticity which has implications for significance testing. As dicussed in Chapter 5 Section 5.4.1, these problems can be overcome by using more robust methods such as bootstrapping.

Hence, bias-corrected bootstrap techniques were applied when running the regression (see Table 15). This showed that at Step 1, demographic variables did not account for a statistically significant proportion of the variance R^2 (R^2= .01, R^2_{change}=.01, p=.700). When the three self-efficacy factors were added to the model, this resulted in a small increase to R^2 (R^2= .08, R^2_{change}=.07, p=.017). Only instructional strategies efficacy accounted for a proportion of the variance ((β=.12 [.03, .21] p=.011). Including collective efficacy in the regression equation did not account for any more variance (R^2= .09 R^2_{change}=.007, p=.318). The results suggest that teachers' instructional strategies efficacy is the most important sub-type of

efficacy for predicting the use of inclusive classroom practices. This partially

supports Hypothesis 2.2 as instructional strategies efficacy predicted reported

behaviour however, classroom management and student engagement efficacy did

not.

Table 15. *Predicting Reported Inclusive Classroom Behaviour*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.010	.010	.475			
Gender				-.02 (-.28, .24)	.03 (-.27, .33)	.02 (-.28, .32)
Years' Exp				.002 (.00, .01)	.003 (.00, .01)	.003 (.00, .01)
Training				.08 (-.06, .21)	.05 (-.09, .20)	.06 (-.09, .20)
2	.080	.070	3.53*			
CM_SE					-.08 (-.18, .13)	-.08 (-.19, .01)
IS_SE					.12* (.03, .21)	.11* (.01, .21)
SE_SE					.03 (-.06, .12)	.02 (-.08, .11)
3	.09	.007	1.00			
CE						.05 (-.05, 15)

***$p <.001$, **$p<.01$, *$p <.05$. Years' Exp= Years of teaching experience;

CM_SE= Classroom management efficacy; IS_SE= Instructional strategies efficacy;

SE_SE=Student engagement efficacy; CE= Collective efficacy.

**6.8 Aim 2.3: Examine the Mediating Role of Self-Efficacy in the Relationship
between Mastery Experience, School Ethos (Collective Efficacy and School
Climate) and Reported Behaviour.**

**6.8.1 Hypothesis 2.3. Self-efficacy would mediate the relationship
between mastery experiences, collective efficacy, perceptions of the school
climate and reported inclusive behaviour.**

Mediation analyses were conducted using Hayes' (2013) PROCESS macro to examine the mediating role of classroom management, instructional strategies and student engagement efficacy in the relationship between overall perceptions of the school climate and reported behaviour; collective efficacy and reported behaviour; mastery experience and reported inclusive classroom behaviours. Results showed that only instructional strategies efficacy significantly mediated the relationship between perceptions of the overall school climate and reported behaviour (β= .14, BCa CI [.03, .28]). Instructional strategies also mediated the relationship between collective efficacy and reported behaviour (β= .07, BCa CI [.01, .15]) and between mastery experience and reported inclusive behaviour (β= .04, BCa CI [.00, .11]). Perceptions of school climate, collective efficacy and mastery experiences therefore impact reported inclusive classroom behaviours by firstly influencing teachers' instructional strategies self-efficacy beliefs. This supports Hypothesis 2.3.

6.9 Discussion Study 2

Study 2 aimed to extend the findings from Study 1 by examining predictors of teacher self-efficacy given that this variable predicted teachers' inclusive classroom behaviour. Based on the literature and on the antecedents of teacher self-efficacy identified in Study 1, the present study examined the importance of mastery experience and school ethos (collective efficacy and overall perceptions of the school climate) in predicting teachers' self-efficacy beliefs towards working with children with ID. Results showed the importance of these variables in predicting each sub-type of self-efficacy (classroom management, instructional strategies and student engagement). Further, collective efficacy mediated the relationships between overall perceptions of the school climate and teacher self-efficacy beliefs. Teacher beliefs

regarding the school climate therefore were related to perceptions of the ability of the staff as a whole to work with children with ID and this influenced teachers' self-efficacy. When examining the contribution of school climate factors independently, instructional strategies efficacy was predicted by academic emphasis (i.e. the school's push for achievement). Student engagement efficacy was negatively predicted by teacher affiliation (i.e. the nature of the relationships between staff).

Study 2 also aimed to test the relationship between teacher self-efficacy and the reported use of inclusive teaching strategies. The results confirmed this relationship, however, only instructional strategies efficacy predicted reported behaviour. Instructional strategies efficacy also mediated the relationship between perceptions of school climate, collective efficacy, mastery experiences and reported behaviour. These variables therefore impact inclusive classroom behaviours by firstly influencing teachers' instructional strategies self-efficacy beliefs. These findings will be discussed in more detail in the following sections.

6.9.1 Relationship between mastery experiences, school ethos (collective efficacy and perceptions of school climate) and teacher self-efficacy beliefs.

School ethos

Collective efficacy. In respect of all three types of teacher self-efficacy beliefs about teaching children with ID, results showed the school ethos variable, collective efficacy, to be an important predictor. This supports research which has shown that collective efficacy predicts variation in teacher self-efficacy (Goddard & Goddard, 2001; Viel-Ruma et al., 2010). Teachers with positive perceptions about the level of competency of the school as a whole, have higher beliefs in their own ability. Social

influence is important in the formation of efficacy beliefs; teachers are not socially isolated and are influenced by those around them (Bandura, 1997). This finding suggests the importance of school cohesiveness in that teachers should be aware of their colleagues' capabilities. In doing so, teachers' own efficacy will be enhanced.

School climate. Teachers' perceptions of the overall school climate also predicted each sub-type of self-efficacy (classroom management, instructional strategies and student engagement), mediated by collective efficacy. Teacher perceptions of the school climate therefore related to beliefs that staff as a whole, are able to include children with ID and this positively impacts the relationship between school climate perceptions and teachers' self-efficacy. In line with SCT, such a finding indicates that the environment surrounding teachers is crucial to the development of efficacy. Teachers who believed they worked in a positive and supportive school environment were more likely to perceive themselves and others as capable of working with children with ID. This may be a result of a positive school climate promoting a sense of belonging which may allow teachers to feel that together, they are capable of successfully teaching children with ID thus enhancing collective efficacy. Indeed, the present study showed that it was perceptions of this group efficacy which mediated the link between school climate and self-efficacy.

Other studies, not focused on ID, have similarly reported relationships between school climate and teacher efficacy towards teaching in general (Collie et al., 2012; Devos et al., 2012; Hoy & Woolfolk, 1993; Mehta et al., 2013; Meristo & Eisenschmidt, 2014; Moore & Esselman, 1994; Newman et al., 1989; Pas, et al., 2012; Tschannen-Moran & Woofolk Hoy, 2001) and in teaching children with disabilities (Brownell & Pajares, 1999; O'Toole & Burke, 2013; Roll-Pettersson,

2008; Weisel & Dror, 2006). The current study supports and extends this to highlight the importance of collective efficacy in the relationship between school climate perceptions and self-efficacy beliefs in teaching children with ID.

A positive school climate is of particular importance to the use of inclusive practices given that some of these may be challenging to implement. Teachers require encouragement and support to get them through any initial perceived slumps in efficacy which occurs from poor performance (Tschannen-Moran et al., 1998). Without a supportive work environment, the negative effects of this poor performance can be detrimental to efficacy which will ultimately impact the teacher's inclusive classroom behaviours. Such a finding has important implications. There is a need to educate head teachers on the importance of school climate and how to promote positive school ethos beneficial to teacher efficacy beliefs. Interventions have successfully influenced school climate beliefs (e.g. Parisi et al., 2015) showing that such a recommendation has value.

School climate comprises beliefs regarding many aspects of the school such as leadership from the head teacher, sense of community among staff, maintaining educational integrity, pushing for academic achievement and availability of resources. It is therefore important to consider which particular aspects of the school climate impact efficacy beliefs. These results showed that the different types of efficacy were predicted by different school climate factors.

Academic emphasis. The results showed that the school climate factor, academic emphasis, predicted instructional strategies efficacy. Teachers who scored high on academic emphasis believed that their school had an expectation of high

achievement where students work hard, seek extra work and respect those who get good grades (OHI; Hoy et al., 1991). High but achievable goals are set for students. The findings demonstrate that these beliefs were related to teachers' perceived ability in designing and implementing activities to aid student learning. Thus teachers who perceived the teaching environment as academically oriented were more likely to have stronger beliefs that they could also use effective instructional strategies for children with ID.

The importance of academic emphasis to teachers' self-efficacy beliefs has been reported previously (Pas et al., 2012). This study, however, did not focus on efficacy towards teaching a difficult group of learners but instead measured efficacy generally. Both the current findings and those of previous research (Pas et al., 2012) suggest that the more the school climate is one that values achievement, the more teachers will do to ensure they provide effective instruction. This may be a result of time and effort they invest in order to design effective instructional strategies which in turn, enhances efficacy for working with both typically developing children and those with ID. It should be noted though that the academic emphasis scale had low reliability and thus these findings should be interpreted with caution.

Teacher affiliation. The findings also demonstrated that student engagement efficacy was negatively related to teacher affiliation. Teacher affiliation relates to beliefs that there is a strong sense of community among staff (Hoy et al., 1991). Teachers know each other well and exhibit friendliness and unity (Salisbury & McGregor, 2002). Although it should be stressed that this was not a strong effect, this seems to contradict research showing strong teacher relationships are important in helping individual teachers feel confident (e.g. Brownell & Pajares, 1999).

Brownell and Pajares' measure of teacher collegiality included items relating to the exchange of ideas and resources among staff. In contrast, the measure of teacher affiliation in the present study related to beliefs that there is trust and friendliness among staff, as such, the present analysis is more concerned with the social interactions between staff. It may be that student engagement efficacy is nurtured when focused, practical support is in place but is potentially undermined if teachers prioritize affective collegial relationships. Given that collective efficacy had a positive impact on self-efficacy, this suggests that having high expectations of the staff's ability is more beneficial to self-efficacy beliefs than social relationships between colleagues. This finding may also be a result of social persuasion which occurs through casual conversations between teachers (Tschannen-Moran et al., 1998). If teachers are highly affiliated, they are likely to listen to each other. If teachers talk negatively about inclusion, this is likely to have an effect on individual teachers' beliefs. Indeed, negative persuasion can lower self-beliefs (Vaezi & Fallah, 2011).

An alternative reason for this finding may be a result of social comparison, that is, the individual believes others are so effective at performing the behaviour that they, themselves, will never reach this standard and as a result, efficacy beliefs are reduced (Chan & Lam, 2008; Heidemeier & Bittner, 2012). This suggests a need for research to not only assess teacher affiliation but also the nature of teacher relationships and how these impact beliefs towards inclusion. Further research is needed not only to assess the nature of teacher relationships but also how these impact beliefs towards inclusion. It should be noted however, that the effect of teacher affiliation on self-efficacy was relatively small.

Head teacher leadership. Another interesting finding was that leadership from the head teacher did not significantly predict any of the efficacy beliefs. One reason for this may because it is the teacher who will work with the child and for the majority of the time, will do this alone. Hoy and Woolfolk (1993) also found that considerations of the head teacher's leadership were not related to efficacy towards teaching 'difficult' students. The authors argued that teachers' intentions are encouraged by factors that help them maintain classroom order and provide useful instructional strategies rather than the relationships with the head teacher.

The current study supports this showing that instructional strategies efficacy beliefs were most reliant on academic emphasis which would push the teacher to provide the best instruction for the child. This, however, contradicts previous studies reporting the importance of head teacher leadership to efficacy towards working with children with disabilities (Brownell & Pajares, 1999; O'Toole & Burke, 2013; Roll-Pettersson, 2008). None of these studies, however, assessed efficacy towards working with children with ID. It may therefore be the case that efficacy sources differ depending on the child's disability. This supports the argument that efficacy beliefs are context specific (Bandura, 1986; Pintrich, & Schunk, 1996; Tschannen-Moran & Woolfolk Hoy, 2001).

Implications for practice. The findings about the role of school ethos in predicting teacher self-efficacy have implications for professional leadership development in schools. School principals and senior management teams need to recognise that individual teachers' self-efficacy and instructional practices with children with ID are influenced by whole school factors such as collective efficacy and school climate, in particular the school's push for achievement. The goal is for

school leadership teams to examine their own school climate and to consider how best to promote a positive school ethos around inclusive teaching practices in their schools. The importance of collective efficacy further suggests that principals should schedule time for teachers to collaborate and share ideas, so that they are aware of colleagues' capabilities and (high) expectations of practice.

Mastery Experience. The results showed that mastery experience was the strongest predictor of all three types of self-efficacy (classroom management, instructional strategies and student engagement) and collective efficacy. Previous research has argued that mastery experiences are a powerful source of efficacy information for teachers (Bandura, 1986, 1997; Tschannen et al., 1998; Tschannen-Moran & McMaster, 2009), but the current findings extend this to teacher efficacy towards working with children with ID in particular. Where this has been examined in the past (Brownell & Pajares, 1999; O'Toole & Burke, 2013; Roll-Pettersson, 2008; Wiesel & Dror, 2006), limitations of the measures employed have limited the strength of conclusions drawn. Further, the present study shows that similar to teachers' self-efficacy, mastery experience also predicts collective efficacy. Teachers therefore look to their past performance of working with children with ID in order to determine how capable they feel they are and how capable they believe staff as a whole are to use inclusive teaching strategies. Mastery experience provides authentic evidence of the individual's ability so much so that perceptions of successful past performance lead to increased efficacy whereas failure leads to a decrease in efficacy beliefs (Bandura, 1997; Morris et al., 2016).

Although mastery experience predicted instructional strategies and classroom management efficacy, it was not a significant predictor of student engagement

efficacy. Both instructional strategies and classroom management efficacy relate to features of the teachers' job that may benefit from mastery experiences. For example, given that instructional strategies relates to beliefs regarding ability to design and implement activities (Tschannen-Moran & Woolfolk Hoy, 2001), if teachers have found certain strategies to be successful, they can they use this experience to inform practice in future years thus enhancing instructional efficacy. Similarly, classroom management efficacy refers to ability to maintain an orderly and organised classroom environment (Tschannen-Moran & Woolfolk Hoy, 2001). With experience, teachers may become confident in what classroom strategies work again, enhancing efficacy in this domain. In contrast to this, student engagement efficacy concerns beliefs in ensuring students are involved, and motivated to learn (Tschannen-Moran & Woolfolk Hoy, 2001). Mastery experience may be less important to this type of efficacy belief, given that the ways in which this is achieved may depend on the temperament and behaviour of the child.

Implication for practice. The significance of mastery experience has practical implications. School principals should provide their staff with the opportunity to reflect on and discuss past performance of working with children with ID. Where teachers perceive past performance to be unsuccessful, in-school coaching support could be provided in order to allow the opportunity to experience successful performance.

This also has implications for pre-service teacher training in that the opportunity to master inclusive teaching strategies should be provided before teachers are expected to implement these successfully in the classroom. Training should allow student teachers the opportunity to master inclusive teaching strategies

before they are expected to implement these in the classroom. One way to do this is through the use of computer-based simulations (Bray-Clark & Bates, 2003; Christensen, Tyler-Wood, Knezek, & Gibson, 2011). These mimic the school environment and provide a hands-on approach to address the specific learning objective, which in the context of the present study, would be to increase the use of inclusive teaching practices. As such, this technique allows for the development of mastery experience and confirmatory evidence of success (Lindsley, Brass, & Thomas, 1995).

6.9.2 Relationship between teacher efficacy and inclusive classroom behaviours.

The findings also indicated that instructional strategies efficacy predicted the use of inclusive classroom practices and that this sub-type of self-efficacy mediated the relationship between perceptions of school climate, collective efficacy, mastery experience and reported inclusive behaviour. This extends research demonstrating a link between teacher self-efficacy and inclusive classroom behaviours (Brady & Woolfson, 2008; Leyser, 2002; Soodak & Podell, 1994; Sharma et al., 2012; Woolfson & Brady, 2009) to further demonstrate that instructional strategies efficacy is the most important type of self-efficacy for inclusive behaviours. This efficacy factor concerns beliefs regarding ability to design activities and assessments for children with ID which is perhaps the most relevant to the curricular and instructional adaptations required for children with ID.

6.9.3 Summary

Examining teacher beliefs and behaviour towards children with ID is important for enhancing teaching practices, professional development opportunities and initial teacher training. This was the first study to investigate the role of mastery experience and school ethos (collective efficacy and school climate perceptions) in teachers' self-efficacy beliefs towards teaching children with ID. The study demonstrated that self-efficacy beliefs were influenced by mastery experiences, collective efficacy and perceptions of the school environment. Specifically, teachers who think highly of the capabilities of the staff as a group, have higher beliefs in their own ability to teach children with ID. Further, the school's push for achievement and the relations between staff also play a role in teachers' self-efficacy beliefs. In addition, perceiving successful past performance of working with children with ID is beneficial to teachers' beliefs about their current ability. These findings are important given that school climate is malleable and thus may serve as a target for intervention. The study brings us closer to understanding how beliefs about ability to work with children with ID may be fostered.

Chapter 7 - Study 3: The Impact of Implicit and Explicit Teacher Beliefs on Reports of Inclusive Teaching Practices for Children with Intellectual Disabilities.

TPB predicts that performance of behaviour is determined by intentions that are formed on the basis of attitudes, social norms and perceptions of control (Ajzen, 1991). Thus the individual engages in effortful and deliberative thought processing in order to make a behavioural decision (See Chapter 3). The findings of Study 1 indicated that while instrumental attitudes, descriptive norms and perceptions of control predicted teachers' intention, there was no relationship between these intentions and later reported behaviour. Instead, both Study 1 and 2 indicated the importance of teacher self-efficacy over intention. This suggests teachers may not use a controlled, effortful thought process as depicted by TPB to determine their inclusive classroom behaviours. Given that teachers must deal with several demands simultaneously in the classroom, they may experience cognitive overload which further reduces the chance that they will use effortful, deliberative processing when responding to students (Kumar, Karabenick, & Burgoon, 2015). These findings suggest automaticity of teachers' classroom behaviour.

The Motivation and Opportunity as Determinants (MODE) model (Fazio 1990; Fazio & Towles-Schwen 1999; Olson & Fazio, 2009) provides an account of how beliefs can influence behaviour automatically. The model argues that two types of cognitive processing exist which can be activated by attitudes. First, deliberative processing is activated when attitudes are not readily accessible and are retrieved from memory using effortful decision making processes (e.g. evaluating the positive

and negative consequences of the behaviour; Fazio & Roskos-Ewoldsen, 2005). This is the process which drives TPB: the individual's attitude is used to determine the behavioural intention and it is this that then predicts the behaviour (Ajzen, 1991; see Chapter 3).

A problem with this processing type, however, is that this requires the individual to have high motivation or opportunity. Teachers may be low in motivation or opportunity to engage in effortful thought processing regarding working with children with ID given the demands on their time within the classroom (Kumar et al., 2015). For example, as well as considering children with ID, teachers must also give time to typically developing children in the class who will have individual support needs. As a result, teachers must deal with many demands simultaneously. If the individual is low in motivation or opportunity, it is proposed that attitudes will activate the second cognitive processing type: spontaneous processing (Fazio, 1990). This involves automatic activation of the attitude when the attitude object is encountered. This then rapidly initiates behaviour which is congruent with this attitude (Fazio, 2001).

Several studies have supported the MODE model's account of the attitude-behaviour relationship (Elliott, Lee, Robertson, & Innes, 2015; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Dovidio, Kawakami, & Gaertner, 2002; Kumar et al., 2015; McConnell & Leibold, 2001; Spalding & Hardin, 1999). This suggests the paradigm may be applicable to understanding the relationship between teachers' attitudes and inclusive classroom behaviours.

Study 1 and 2 found that self-efficacy was an important predictor of reported inclusive behaviour. Given that self-efficacy may relate to perceptions of motivation (Rhodes & Courneya, 2003c, 2004; Williams & Rhodes, 2014), teachers who are low on self-efficacy may be more likely to use spontaneous processing and thus act upon their implicit beliefs. Self-efficacy variables (instructional strategies, classroom management and student engagement efficacy) may therefore moderate the relationship between teachers' implicit attitudes and reported behaviour. The lower teachers' feel on efficacy, the stronger the relationship between their automatic beliefs and reported behaviour. To date, no research has attempted to examine this. This merits further investigation.

It should be noted though that implicit attitudes have been found to also predict non-verbal behaviour during interracial interactions (Dovidio et al., 1997; Dovidio et al., 2002; McConnell & Leibold, 2001). This suggests that implicit attitudes may play a role in more spontaneous behaviours towards minority groups. Given that children with disabilities are a minority group, this may be an important consideration in relation to teachers' behaviour. In addition to predicting reported inclusive behaviours then, implicit attitudes may also be important to teachers' non-verbal behaviour such as using encouraging gestures or facial expressions to support the child. Evidence suggests that teachers' use of facial expressions, eye or head movements and gestures impact student learning and the maintenance of a successful classroom climate (Chaudhry & Manzoor, 2012; She & Fisher, 2002; Woolfolk & Brooks, 1985). Thus in addition to inclusive teaching practices, non-verbal behaviour should also be considered important to the successful inclusion of children with ID.

The MODE model's spontaneous processing focuses on the attitude towards the object rather than the attitude towards the behaviour (Fazio, 1990). Having little motivation or opportunity (e.g. such as time/demands from other tasks simultaneously) means that an attitude towards the behaviour is not formed in the immediate situation. Instead, the individual's behaviour is guided by the attitude towards the object; the individual will behave in a way which is consistent with this immediate perception (Fazio, 1986). In relation to the current research then, this suggests that examining the influence of spontaneous processing on behaviour requires the measurement of teachers' attitude towards the child with ID (attitude towards object) rather than the attitude towards acting inclusively (attitude towards behaviour).

7.1 Measuring Attitudes Which Activate Spontaneous Processing

Investigations of teacher attitudes and behaviour towards children with disabilities have most often relied on explicit measurement such as self-report (Antonak & Livneh, 1995). These measures encourage the individual to engage in effortful and deliberative thought processing but cannot provide insight into spontaneous processing. In contrast, implicit measures of attitudes aim to assess the attitude object without having to directly ask the participant for a verbal report. These involve using quick performance based procedures and thus provide a measure of relatively automatic mental associations (Fazio & Olson, 2003; Hahn, Judd, Hirsh, & Blair, 2014). The emergence of such techniques was an important development in social cognition research (Fazio, Jackson, Dunton, & Williams, 1995; Hofman, Gawronski, Gschwendner, Le., & Schmitt, 2005; Nosek & Banaji, 2001). Despite this, there is a lack of research implementing such techniques to examine teacher

implicit attitudes and even less research in relation to attitudes towards working with children with ID.

The importance of such an investigation was further demonstrated by the findings of Wilson and Scior (2014) in a review of research examining implicit attitudes towards people with disabilities. Results showed that caregivers of people with ID held negative implicit attitudes. Although this study focused on caregivers and adults with ID, the findings may have implications for teachers of children with ID. This therefore merits further investigation.

7.2 Teacher Implicit Attitudes Towards Children with Disabilities

In one of the few studies, Hornstra, Dennessen, Bakker, Van den Bergh and Voeten (2010) measured teacher implicit attitudes towards children with disabilities, in particular, dyslexia, using an evaluative priming task. Results showed that implicit attitudes were negative towards children with dyslexia. This indicated that teachers were not favourable towards learners with dyslexia. In contrast to the implicit attitude findings, teacher explicit attitudes were highly positive (mean score was 4.22 out of a possible 5). Results also showed that implicit attitudes predicted teachers' achievement ratings of the children.

Implicit preference has also been reported for typically developing children over those with an emotional and behavioural disorder (Scanlon & Barnes-Holmes, 2013), autism (Kelly & Barnes-Holmes, 2013), and those with additional support needs because of immigrant backgrounds (Markova, Cate, Krolak-Schwerdt, & Glock, 2015). It may be an issue of social desirability in that teachers are unwilling to express a negative attitude towards a child (e.g. Hornstra et al., 2010), as this may

be viewed as unprofessional. This suggests that teachers' implicit attitudes towards children with ID may differ from their explicit attitudes measured in Studies 1 and 2.

To date, only one study has attempted to measure teachers' implicit attitudes towards children with ID. Hein, Grumm and Fingerle (2011) showed that participants were more likely to associate the category 'disabled' with the attribute 'unpleasant' thus suggesting a negative implicit attitude towards intellectual disability. Disability is inherently a state of deficit; people might feel negative towards deficit and thus the task may tap this. The impact of these attitudes on behaviour was, however, not tested. This may be a result of the sample which comprised student teachers who may not have had teaching experience at the point of participation. There is a need to understand practising teachers' implicit attitudes and how these may influence inclusive classroom behaviours given that such behaviours may be performed automatically.

A problem with the aforementioned studies relates to inconsistent measurement of implicit attitudes. For example, evaluative priming (Hornstra et al., 2010; Markova et al., 2015), implicit relational assessment procedure (Kelly & Barnes-Holmes, 2013; Scanlon & Barnes-Holmes, 2013) and the implicit association test (Hein et al., 2011) were implemented. It is common for researchers to implement different implicit measures making the comparison of results across studies and/or behaviours challenging. There is a need then to consider the most appropriate implicit attitude measures in order to successfully measure teacher implicit attitudes towards children with ID.

7.3 Implicit Association Test

A number of approaches have been used to implicitly measure attitudes such as affective priming (Fazio, Sanbonmatsu, Powell, & Kardes, 1986), the go/no go task (Nosek & Banaji, 2001), the extrinsic affective Simon task (De Houwer, 2003), implicit relational assessment procedure (IRAP; Barnes-Holmes, Barnes-Holmes, Power, Hayden, Milne, & Stewart, 2006) and the affect misattribution procedure (Payne, Cheng, Govorun, & Stewart, 2005). However, the reliability of these methods is often low (Perugini, 2005) with the need for refinement being recognised (e.g. Golijani-Moghaddam, Hart, & Dawson, 2013). The most successful and commonly used measure of implicit attitudes is the Implicit Association Test (IAT) developed by Greenwald, McGhee and Schwartz (1998).

The IAT is based on the premise that individuals perform faster when they can use well-rehearsed cognitive associations (Rudman, 2011). The IAT assesses the strength of associations between target concepts (e.g., ethnic minorities or disabled individuals) and evaluations (e.g., positive or negative). During the test, participants are required to sort words into the left and right hand sides of a computer screen by pressing, for example, 'E' if the word belongs to the category on the left and the 'I' key if the word belongs to the category on the right. The task involves seven main blocks.

In the first block, participants sort words relating to the target concept (e.g. disabled) versus words relating to its opposite (e.g., able). If the category 'disabled' was on the left and an image or word relating to a disability appeared on the screen, the participants would press 'E'. In the second block, participants are required to sort words which relate to the evaluation (e.g. positive or negative). If the category

'negative' was on the left and an unpleasant word was presented, the participant would press 'E'. Blocks three and four present the first set of double categorisation tasks meaning all four categories are used. The IAT combines the target concept and evaluation words. For example, the category on the left would be 'disabled /negative' whereas on the right hand side, the category would be 'able/positive'. Participants are again asked to sort words into its respective category. For example, if an unpleasant word or a word relating to disability was presented, the participant would press 'E'. In block five, the placement of the target concept switches so that 'disabled' would be on the right and 'able' would be on the left. Only the target category items (disabled vs able) are presented to allow participants to practise the new positions. The sixth and seventh blocks present the second set of double categorisation tasks, the new positioning of the target categories is paired with the previous attribute category positions, e.g., 'positive' and 'disabled' to the right response key and 'negative' and 'able' to the left response key. See Appendix 4 for illustrations of each block of the IAT.

Congruent and incongruent pairings occur in blocks three and four and in blocks six and seven. Congruent blocks relate to a pairing that participants would be expected to make implicitly. For example, 'disabled' paired with 'negative'. Incongruent blocks are the opposite: 'disabled' paired with 'positive'. See Table 16 for an illustration of this and for information on practice vs test trials.

Table 16. *Sequence of Trial Blocks in the IAT. Adapted from Greenwald, Noesk and Banaji (2003)*

Block	No. of Trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	20	Target Practice	Disabled person words	Able person words
2	20	Evaluation Practice	Negative words	Positive words
3	20	Compatible Test 1	Negative words + disabled person words	Positive words + able person words
4	40	Compatible Test 2	Negative words + disabled person words	Positive words + able person words
5	40	Target Incompatible Practise	Able person words	Disabled person words
6	20	Incompatible Test 1	Negative words able person words	Positive words + disabled person words
7	40	Incompatible Test 2	Negative words + able person words	Positive words + disabled person words

Implicit attitudes are inferred from the difference in participants' response time to sort words between these different pairings. An individual would be said to have an implicit preference for non-disabled people relative to disabled people if performance is faster when categorising words when 'disabled people' and 'negative' shared a response key than when 'disabled people' and 'positive' shared a response key (Greenwald et al., 1998). When asked to perform incongruent trials (disability and positive words), the automatic preference for 'no disability and positive' and 'disability and negative' compete with the demands of the task which then increases the response time (Rudman, 2011).

The first demonstration of the IAT was presented in Greenwald et al's (1998) seminal paper. Participants were presented with two target concepts (flower names or insect names) and two evaluation categories (pleasant or unpleasant). Results showed

that participants responded more quickly when 'flower' and pleasant' and 'insect and unpleasant' shared a response key than when 'flower and unpleasant' and 'insect and pleasant' were assigned the same key. Thus participants found it easier to associate the target concept 'insects' with the attribute unpleasant than with the attribute pleasant. Greenwald et al. (1998) concluded that participants had an implicit preference for flowers relative to insects.

7.3.1 Research using the IAT. The IAT has received considerable research attention and the accumulated evidence supports its reliability, internal consistency and test-retest reliability (Lane, Banaji, Noesk, & Greenwald, 2007; Noesk, Greenwald, & Banaji, 2007; Perugini, 2005; Rudman, 2011). Further, even if participants are aware of the IAT procedure and task expectations, the IAT effect is still reliably produced suggesting that responses cannot be faked (Banse, Seise, & Zerbes, 2001; Do-Yeong, 2003; Egloff, & Schmukle, 2002; McConnell & Leibold, 2001). As a result, the IAT has been applied to many psychological settings including social, clinical, developmental and health (Hofman et al., 2005; Nosek, Greenwald, & Banaji, 2007a).

7.3.2 Limitations of the IAT. Despite its popularity, a limitation of the IAT relates to the fact that it measures attitudes towards pairs of attitude objects (Bohner, Siebler, Gonzalez, Haye, & Schmidt, 2008; Penke, Eichstaedt, & Asendorpf, 2006). For example, attitudes towards disabled vs. able are measured, but not simply attitudes towards disability. This is problematic for two reasons. First, given that the IAT requires two opposite target categories (e.g. disabled vs. able), developing the task is difficult if there is no clear opposite category for the attitude object. This can be the case when researchers are interested in measuring preferences towards a very

specific attitude object (Karpinski & Steinman, 2006; Wilson & Scior, 2015). For example, Penke et al. (2006) examined implicit attitudes towards socio-sexuality. As there is no obvious opposite word, the authors used the neutral term 'conversation' as the comparison category. Results showed that there were individual differences that were irrelevant for socio-sexuality but influenced the IAT scores in the context of the 'conversation' category. The authors argued that an IAT-type task that does not require an opposite category would be more useful.

The second problem arises in the interpretation of the IAT scores. On a disabled/non-disabled IAT test, scores are interpreted as a comparison of the individual's positive 'non-disabled person' associations and negative 'disabled person' associations with their negative 'non-disabled person' association and positive 'disabled person' association. A positive score can indicate that the individual has (1) many positive 'non-disabled person' associations, (2) many negative 'disabled person' associations (3) fewer negative 'non-disabled person' associations and/or (4) little positive 'disabled person' associations. From the IAT score, it is difficult to identify which of these are determining the overall score, meaning the interpretation of IAT scores is ambiguous (Karpinski, & Steinman, 2006; Nosek, Greenwald, & Banaji, 2005). If a single category IAT task was used, the need to examine evaluations towards able persons would be eliminated and thus possible to obtain a measure of just the evaluative associations for disability. This would provide a clearer interpretation of the IAT scores.

7.4 Single Target IAT

In response to the above limitations of the IAT, two groups of researchers have established identical measures called the single target IAT (ST-IAT;

Wigboldus, Holland, & van Knippenberg, 2004) and the single category IAT (SC-IAT; Karpinski & Steinman, 2006). These use a similar procedure as the original IAT but differ in that only one target category is used. Trials consist of the target category and an evaluative concept (e.g. positive words) on one side of the computer screen and the other evaluative concept stimuli (e.g. negative words) being on the other side of the computer screen. Response times can then be compared between blocks where the target category is paired with positive words and blocks where the target category is paired with negative words.

The ST-IAT has five blocks of trials (See Table 17 and Appendix 5). Block 1 (20 trials) requires participants to practice categorising the two sets of evaluative concept stimuli (i.e. positive and negative words) using the 'I' and 'E' keyboard keys. In Block 2 (20 trials) the words representing the target category are added to one response key. Participants are then asked to practice categorising all three sets of words. Block 3 is identical; however, the number of trials is increased to 40. In Block 4 (20 trials) the target category is switched to be paired with the opposite response key and again, participants practice categorising all three sets of words. Block 5 is identical to Block 4 however the trials are increased to 40.

Table 17. *Sequence of Trial Blocks in the ST-IAT*

Block	No. of Trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	20	Evaluation Practice	Positive words	Negative words
2	20	Target Compatible Practice	Positive words + target category words	Negative words
3	40	Target Compatible Test	Positive words + target category words	Negative words
4	20	Target Incompatible Practice	Positive words	Negative words + target category words
5	40	Target Incompatible Test	Positive words	Negative words + target category words

Evidence has confirmed the reliability and validity of the ST-IAT (Bluemke & Friese, 2008; Chantal, Houben, Hofmann, Roefs, & Janse, 2010; Conroy, Hyde, Doerksen, & Riberio, 2010; Hempell, Buck, Goesthals, & van Marle, 2012; Wilson & Scior, 2015). Although the IAT has demonstrated higher reliability (Bluemke & Friese, 2008; Stieger, Goritz, Hergovich, & Voracek, 2011), the ST-IAT is a good alternative if the researcher is interested in examining an attitude object with no clear opposite category. Given that the current study is interested only in children with ID and is therefore interested in examining positive and negative associations with ID words, it is more appropriate to use the ST-IAT as there is no clear comparison category. Although a label such as 'child without ID' could be included, this introduces problems in that it is not clear what child to consider. Typically developing children have a range of abilities and thus including this label may cause confusion as to which label the disability and able words belong. Using the ST-IAT also makes the results easier to interpret.

7.5 Aims and Hypotheses

The results from Study 1 and 2 indicated that with the inclusion of self-efficacy, there was no relationship between intentions and reported behaviour. This may suggest that when deciding whether to act inclusively, teachers do not engage in an effortful, deliberative thought process as depicted by TPB. Based on the MODE model, it may be the case that teachers' immediate perception of the attitude object (i.e. the child with ID) determines the use of inclusive classroom behaviours.

In addition to explicit attitudes, Study 3 also implicitly measured teachers' attitudes towards children with ID and examined how these related to reported inclusive classroom behaviours. Little research has attempted this despite the growing appreciation for the importance of implicit attitude measurement in a teaching context. The study also examined the role of self-efficacy given that this contributes to teachers' reported behaviour. It may be that this variable moderates the relationship between implicit attitudes and behaviour.

Study 3 had three main aims. The first was to examine the nature of mainstream teachers' implicit beliefs towards children with ID (Aim 3.1). The second aim (Aim 3.2) was to assess the relationship between primary teachers' explicit and implicit attitudes towards children with ID. Aim 3.3 was to examine the relationships between implicit and explicit attitudes and reported behaviour.

- **Hypothesis 3.2.** Implicit and explicit attitudes towards children with ID will not be correlated.

- **Hypothesis 3.3a.** Implicit attitudes will predict teachers' reported inclusive classroom behaviours and reported non-verbal behaviours.

- **Hypothesis 3.3b**. In line with TPB (see Chapter 3 Section 3.2) and Study 1, explicit attitudes will not predict reported inclusive behaviour.

- **Hypothesis 3.3c**. Self-efficacy will moderate the relationship between teacher implicit attitudes and inclusive classroom behaviours. Teachers lower in efficacy beliefs will demonstrate stronger relationships between implicit attitudes and reported behaviour.

7.6 Method Study 3

7.6.1 Participants. Data were collected from 87 Scottish general classroom primary teachers from mainstream schools. The sample comprised 72 females and 8 males (7 participants did not provide gender information). Age ranged from 22 to 62 (M=36.89 SD=11.61). The mean length of teaching experience was 11.22 years (SD= 9.06) which ranged from participants with 1-year experience to participants with 40 years' experience. As a result of time constraints in two schools, 5 participants did not complete the computer task and 7 participants did not complete the questionnaire. Data from participants who completed the questionnaire but not the computer task were retained given that some analyses were carried out using only the questionnaire data. Data from participants (n=7) who did not complete the questionnaire were removed as questionnaire data were required to run any statistical analyses.

Based on recommendations for carrying out multiple regressions (Green, 1991; Tabachnick & Fidell, 2007, 2013), a sample size of 74 was adequate. This was also supported by a priori power analysis carried out using G*Power (Faul, et al., 2007; Faul et al., 2009) based on an alpha of .05, power of .80 and a medium effect

size. A medium effect size was expected given the literature showing such effects in the relationship between implicit attitudes and behaviour across a range of domains (Arcuri, Castelli, Galdi, Zogmaister, & Amadori, 2008; McConnell, 2001; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Payne, Govorun, & Arbuckle, 2008; Perugini, 2005; Richetin, Perugini, Prestwich, & O'Gorman, 2007; Rooke, Hine, & Thorsteinsson, 2008).

Recruitment strategy. Four Scottish school districts: South Ayrshire, North Ayrshire, West Dunbartonshire and North Lanarkshire were contacted in order to obtain permission to approach mainstream primary schools within these authorities. When permission was granted, the researcher phoned schools to discuss the study with head teachers and ask whether they would allow teachers to take part. Schools in North Lanarkshire were sent an initial email rather than a phone call as the conditions of council approval stated that an email must be sent when first contacting each school. Where schools responded to this, the researcher arranged a time and date to visit the school. If schools did not reply to this email, the researcher phoned the school one week later.

7.6.2 Design. The study was cross-sectional in design and involved the use of the ST-IAT which requires participants to complete a short computer task. Self-report questionnaires were also used to measure demographic variables, explicit disability attitudes, explicit inclusion attitudes, teachers' reported inclusive classroom behaviours, non-verbal behaviour and self-efficacy (instructional strategies, classroom management, and student engagement).

D scores (see page 206 for details on this) were calculated to examine the nature of teachers' implicit beliefs towards children with ID. For Hypothesis 3.2, correlational analysis was conducted to examine the relationship between implicit and explicit attitudes. For Hypothesis 3.3a and 3.3b, implicit attitude, explicit disability attitudes and explicit inclusion attitudes were the independent variable and reported inclusive classroom behaviours was the outcome variable. For Hypothesis 3.3c, the moderating effect of self-efficacy (instructional strategies efficacy, classroom management efficacy and student engagement efficacy) in the relationship between implicit attitudes and reported inclusive behaviours was tested.

7.6.3 Measures

Demographic information. Participants were asked to provide information regarding their gender, age, qualifications, special education training, what age group they taught, years of experience teaching, years of experience teaching a child with ID and if they currently had a child with ID in their class.

Teacher implicit attitudes. Implicit teacher attitudes toward children with ID was measured using a version of the ST-IAT (Karpinski, & Steinman, 2006; Wigboldus, Holland, & van Knippenberg, 2004) which was created using E-Prime software. The target category of the ST-IAT was labelled as 'child with ID'. Target stimuli words (i.e. words in which participants would be required to respond to by placing them under the 'child with ID' label) were: mental handicap, slow learner, impaired, special needs. These words have been used in previous research examining implicit attitudes towards ID (Wilson & Scior, 2015). Participants were given a definition identical to that used in Study 1 and 2 to define this term:

We would like you to think of the term intellectual difficulties (ID) as including children who find it difficult to learn, understand new or complex information, communicate with others and cope independently. ID can include children with a diagnosis of intellectual difficulties, learning difficulties as well as those who have difficulties in these areas but do not have a diagnosis.

The attribute category of the ST-IAT was labelled 'positive' vs. 'negative'. Positive words were: joy, love, peace, wonderful, pleasure, excellent. Negative words were: evil, angry, terrible, rotten, nasty, bomb. These were taken from the stimuli available on Project Implicit website. Project Implicit was founded in 1998 by Greenwald, Banaji and Noesk. Over 2.5 million people have completed IATs through this website across 17 topics (Nosek et al, 2007b). The website also offers stimuli material for research implementing IAT procedures. These words were deemed appropriate as researchers have been instructed to ensure that attribute words are not related to the attitude object (Rudman, 2011). Further, using normatively positive or negative words as targets is standard practice for assessing the individual's evaluation (i.e. attitude) towards the object (Rudman, 2011). By observing the extent to which primes affect how quickly people can judge targets, researchers can infer attitudes toward primes (Rudman, 2011).

In Block 1 (20 trials) participants practised categorising the two sets of evaluative concept stimuli (i.e. positive and negative words) using the 'I' and 'E' keyboard keys. In Block 2 (20 trials) the words representing the target category (i.e. child with ID) were added to one response key. Participants then practised categorising all three sets of words. Block 3 was identical; however, the number of trials was increased to 40. In Block 4 (20 trials) the target category was switched to

be paired with the opposite response key and again, participants practised

categorising all three sets of words. Block 5 (40 trials) was identical to Block 4. In

keeping with regular IAT protocol, incorrect responses were signalled by the

computer and had to be corrected. See Table 18 for trial number and sequence

details[5].

Table 18. *ST-IAT Trial Information*

Block	No. of Trials	Function	Items assigned to left-key response	Items assigned to right-key response
1	20	Evaluation Practice	Positive words	Negative words
2	20	Target Compatible Practise	Positive words + child with ID words	Negative words
3	40	Target Compatible Test	Positive words + child with ID words	Negative words
4	20	Target Incompatible Practice	Positive words	Negative words + child with ID words
5	40	Target Incompatible Test	Positive words	Negative words + child with ID

Scoring. A scoring algorithm modelled on Greenwald et al's (2003) improved

D score algorithm was implemented. The *D* score was developed through an analysis

of various scoring algorithms using data from thousands of Project Implicit

respondents. The *D* score is an effect size based on the pool standard deviation for

the whole sample (Rudman, 2011). This method of scoring is useful in reducing the

effect of task order, practise effects and unlike using mean latencies, is not

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[5] It is common practice to counterbalance the block order in the IAT and ST-IAT (Nosek et al., 2007a). Half of the sample completed the task as depicted in Table X whereas the other half completed the task in the reverse order. Thus these participants completed blocks containing negative and child with ID words prior to trials containing positive and child with ID words.

influenced by response speed differences (Greenwald et al., 2003). As a result, the *D* score is the preferred method of calculating IAT scores (De Houwer & De Bruycker, 2007). Steps to calculate the *D* score are discussed in the Results Section (see page 215). Scores range from 2 to -2; the more positive the *D* score, the more positive the implicit attitude is said to be (Nosek et al., 2007a).

Reliability. Although there is no consensus regarding how to calculate internal consistency of implicit measures (Williams & Kaufmann, 2012), it is recommended that all trials are split into two-halves and thus two separate *D* scores are calculated on the basis of this. The two scores can then be used to calculate a split-half coefficient or a Cronbach's alpha value (Gawronski & De Houwer, 2014). Given the lack of consensus, the researcher calculated both types of coefficients to ensure reliability of the task.

To calculate Cronbach's alpha, Egloff and Schmukle's (2002) method was used. This involved calculating compatible/incompatible difference scores. To do this, participants' response latencies for compatible and incompatible test blocks were log transformed. The latency for each compatible test trial was then subtracted from the corresponding incompatible test trial. This was performed on all test trials. Cronbach's alpha was then computed using these difference scores. This showed the ST-IAT to have good internal consistency ($\alpha = .82$).

To obtain a split-half reliability coefficient, De Houwer and De Bruycker (2007) approach was used. For each participant, two *D* scores were calculated. One used only the odd trials of the two test blocks and one used only the even trials. This ensured that each score was based on an equal number of trials. One issue with split

half reliability coefficients is that as only half the number of items is used, the reliability coefficient is reduced. One way to overcome this is to apply a Spearman-Brown correction as this estimates reliability of all items (Kaplan & Saccuzzo, 2001; rather than half which is the case when using split half reliability). In doing so, the split-half reliability of the *D* Score for the ST-IAT was .76.

***Explicit attitude towards attitude object*.** The Interaction with Disabled Persons Scale (IDP: Gething & Wheeler, 1992) was used to assess explicit attitudes towards disability. The present study adapted the measure to relate specifically to attitudes towards children with ID. An example item is 'I admire their ability to cope'. The scale consists of 20 items and employs a six-point Likert scale. Participants were asked to indicate the extent to which they agreed with each statement by choosing one of the Likert options. Four items were reversed scored. Scores were calculated to produce a mean explicit attitude score. Higher scores indicated less positive attitudes. The IDP was selected as evidence suggests it is currently the best available measure of attitudes toward individuals with disabilities (Forlin, Fogarty, & Caroll, 1999; Gething, 1994; Gething et al., 1997; Thomas, Palmer, Coker-Juneau, & Williams, 2003) and has been previously adapted to examine teacher attitudes towards children with ID (Brady & Woolfson, 2008).

When using the scale, some have opted for a two factor solution comprising 'discomfort' and 'sympathy' subscales (Brady & Woolfson, 2008; Tait & Purdie, 2000). However, others have opted to sum all items of the scale and use a total IDP score (Mohay & Reid, 2006; Vaughn, Thomas, & Doyle, 2011). A principal axis factor analysis was conducted on the 20 items with Varimax rotation to determine whether the factor structure supported the existence of two factors or one total

disability attitude factor. The KMO was 0.56 however, some of the KMO values for individual items lower than .50 suggesting items were not loading highly onto a particular factor. An initial analysis was run to obtain eigenvalues for each factor in the data. Examination of eigenvalues showed that the factors accounted for only 27.80% of the variance. It was clear that the majority of items loaded onto factor one. Those which did load onto factor 2, also loaded onto factor one.

The analysis was re-run using only the 10 items both Brady and Woolfson (2008) and Tait and Purdie (2000) used to create the 'discomfort' and 'sympathy' subscales. Despite this, there was still no clear factor solution. This provided evidence to support the existence of one overall IDP score rather than implementing the 'discomfort' and 'sympathy' subscales. Thus all items were averaged to provide an overall disability attitude measure. Adequate reliability of the measure was found (α=.68).

Explicit attitude towards inclusion. Teacher attitudes specifically towards inclusion were measured using the cognitive and affective subscales of the Multidimensional Attitudes toward Inclusive Education Scale (MATIES: Mahat, 2008). This measure assesses attitudes specifically towards inclusion and working with learners with disabilities. Each subscale contains six items modified in the present study by relating only to children with ID. An example item on the cognitive attitude subscale is 'I believe that students with ID should be taught in special education schools'. An example item from the affective attitude scale is 'I get frustrated when I have difficulty communicating with students with a disability'. Participants indicated the extent to which they agreed or disagreed with each statement on a six-point Likert rating scale: 1=*strongly agree*, 2=*somewhat agree*,

3=*agree*, 4=*disagree,* 5=*somewhat disagree* and 6=*strongly disagree*. Higher scores indicated more positive attitudes. Two items on the cognitive subscale and each item on the affective subscale were reverse scored. Given the aims of the present study, the cognitive and affective subscales were combined to create an overall attitude towards inclusion score. The reliability and validity of this measure has been previously confirmed (Pijl, & Minnaert, 2012; MacFarlane & Woolfson, 2013; Yan & Sin, 2014). The current study also found good reliability (α=.75).

  Behavioural intention. The behavioural subscale of the MATIES was employed to measure behavioural intention to promote the inclusion of children with ID. The scale contains six items assessing the individual's intention to implement inclusive teaching practices. Again, the scale was modified in the present study to relate only to including children with ID. An example item is 'I am willing to adapt the curriculum to meet the individual needs of students with ID regardless of their ability'. Participants indicated the extent to which they agreed or disagreed with each statement on a six-point Likert rating scale: 1=*strongly agree*, 2=*somewhat agree*, 3=*agree*, 4=*disagree,* 5=*somewhat disagree* and 6=*strongly disagree*. Higher scores indicated more positive attitudes. The reliability of the scale has previously been confirmed (Ahmmed et al., 2014; Yan, & Sin, 2014, 2015). Cronbach's alpha coefficients supported the internal consistency of the measure in the current study (α=.76).

  Teacher self-efficacy. The Teachers' Sense of Efficacy Scale (TSES: Tschannen-Moran & Woolfolk, 2001) was used to measure teachers' self-efficacy towards the inclusion of children with ID. The reliability of the scale has been confirmed in previous research (Klassen, & Chiu, 2010; MacFarlane & Woolfson,

2013; Poulou, 2007; Tschannen-Moran, & McMaster, 2009; Wolters & Daugherty, 2007) and in Study 2 (see Chapter 6, Section 6.5.3). The 12-item version was used in order to minimize the time required of participants.

As discussed in Chapter 6, Section 6.5.3, the TSES contains three subscales which measure efficacy beliefs towards instructional strategies, classroom management and student engagement. Similar to Study 2, the present study adapted the scale to measure teacher self-efficacy specifically towards working with children with ID. Participants responded to items using a 9-point Likert scale ranging from '*nothing at all*' to 'a *great deal*'. Internal consistency was high for each of the measure's subscales (classroom management α=79; instructional strategies α= .77; student engagement α=.75).

Reported inclusive behaviours. Similar to Study 2 (see Chapter 6 Section 6.5.3), behaviour was measured using the Differentiated Instruction Scale (DIS; Roy et al., 2013) which assesses the use of instructional adaptations (8 items) and academic progress monitoring strategies (4 items) in general education classrooms. Questions were adapted to relate only to behaviours when working with children with ID. Participants responded using a 5-point Likert scale, which ranged from 1=*never* to 5=*very frequently*. Higher scores indicated more frequent use of inclusive teaching practices. Roy et al. (2013) found good reliability of both instructional adaptations items (α=.86) and academic progress (α=.74). The DIS is a relatively new measure but has been successful in measuring inclusive practices in a number of studies (Prast, Van de Weijer-Bergsma, Kroesbergen, & Van Luit, 2015; Roy et al., 2013). Given the high internal consistency reported by Roy et al. (2013) and the adaptability of the items to relate to teaching children with ID, the scale was deemed

most appropriate. Further, Study 2 found high reliability of the scale (α=.86). The current study found good reliability of the total DIS score (α=.84) and of both subscales (instructional adaptations α=.76; academic progress monitoring α=.72). Similar to Study 2, scores on all items were averaged to create an overall reported inclusive behaviour score.

Non-verbal behaviour. Non-verbal behaviour was measured using an adapted version of the non-verbal support subscale of the Teacher Communication Behavior Questionnaire (TCBQ; She & Fisher, 2000, 2002). This included 8 items which refer to how much the teacher uses non-verbal communication to positively interact with the children. Although this is often used as a measure of the child's perception of the teachers' behaviour, the current study adapted items to become a teacher self-report measure of behaviour towards children with ID. Although using self-report measures of non-verbal behaviours is a relatively new approach, it has been recommended (Richmond, McCroskey, & Johnson, 2003; She & Fisher, 2002). An example items include 'I nod my head to show support when I see a student is struggling to answer a question'. Participants responded to each item on a 5-point scale with the alternatives of 1=*almost never,* 2=*seldom,* 3=*sometimes,* 4=*often*, and 5=*very often*. The TCBQ has been found to display good internal consistency and reliability (Eupena, 2012; Kaya, Özay, & Sezek, 2008; She & Fisher, 2002). The current study also found good reliability of the measure (α=.85).

7.6.4 Procedure. Ethical approval was obtained from University of Strathclyde's School of Psychological Sciences and Health Ethics Committee. Following permission from school districts, West Dunbartonshire, North Lanarkshire, South Ayrshire and North Ayrshire, and then subsequently head

teachers from schools within these authorities, the researcher visited 14 schools. As participation involved completion of a computer task, the researcher visited schools most commonly during the children's assembly time or during staff meetings after school hours. The researcher introduced the study and distributed participant information sheets. Those who wished to take part were informed that (a) the study was about beliefs towards inclusion; (b) responses would be used for research purposes only and all information would be confidential. Ethical rights were explained to participants and they were asked to provide consent before starting the task.

All participants completed the ST-IAT on a laptop supplied to the researcher by the University of Strathclyde. Instructions and the definition of ID were presented before the task commenced and participants were instructed to press the space bar when ready to begin. Further instructions were given after each set of trials to make participants aware what they were expected to do in the next block. In total, the task took approximately 5 minutes to complete. Participants' data were stored on a DatAshur device. This required a 9-digit pin code to be entered before connecting the device to the USB port. This ensured that the data would not be seen by unauthorised persons.

The questionnaire took no longer than 15 minutes to complete. Participants were instructed to seal completed questionnaires in an envelope before handing back to the researcher. ST-IAT and questionnaire data were matched using an allocated number. While it was not possible to identify any individuals on the basis of this number, participants were made aware of this in both the information and debrief sheet as it would be important to state at that point if they wished to withdraw. The

administration of the ST-IAT and the questionnaire was counterbalanced as this is

common IAT procedure (Nosek, 2005; Perugini, 2005; Spence & Townsend, 2007;

Vaughn et al., 2011; Wilson & Scior, 2015). Multivariate analysis of variance

showed no significant differences with respect to the order in which the ST-IAT and

questionnaire was completed V=.22, $F(11, 62)$= 1.58, p=1.29. At the end of the task,

teachers read a debrief sheet to ensure they were appropriately informed about the

purpose of the research. The researcher gave all schools a box of chocolates to thank

participants.

Analyses. Data were analysed using SPSS 22. Before running analyses, the

researcher cleaned up the data. This involved computing mean scores for variables,

checking and addressing missing data and identifying outliers (details provided

below). For Aim 3.1, *D* scores were calculated to examine the nature of teachers'

implicit beliefs. Guidelines (Nosek et al., 2007a; Wilson & Scior, 2015) were used to

determine whether participants had a positive, neutral or negative implicit attitude.

For Aim 3.2 and to test Hypothesis 3.2, correlational analysis was used to examine of

relationships between implicit and explicit attitudes towards children with ID. This

would indicate if these were distinct constructs. For Aim 3.3, quadratic regressions

were used given that it is possible to be within the neutral category for implicit

attitudes and thus the relationship between implicit, explicit attitudes and reported

behaviour may be curvilinear. Quadratic regressions were conducted to test

Hypothesis 3.3a that implicit attitudes would predict teachers' reported inclusive

classroom behaviours and Hypothesis 3.3b that explicit disability and inclusion

attitudes would not predict reported inclusive behaviour. Moderation analysis was

used to test Hypothesis 3.3c that self-efficacy would moderate the relationship between teacher implicit attitudes and inclusive classroom behaviours.

7.7 Results Study 3: Aim 3.1. The Nature of Teachers' Implicit Beliefs Towards Children with ID.

7.7.1 Preparation of the data

Missing data. Missing data occurred as a result of participants missing items or sections of the questionnaire. Little's (1998) MCAR tested that the data were missing at random. This was non-significant X^2 (1078) = 684.52 p=1.00, suggesting that there was no systematic reason for missing data. Where less than 5% of data is missing for any variable any imputation technique can be employed to address this (Rubin et al., 2007; Schafer, 1999; Tabachnick & Fidell, 2007, 2013). Similar to Study 1 and 2, mean substitution was used to replace missing values. Reasons for selecting this approach over multiple imputations were discussed in Chapter 5 Section 5.3.1.

Outliers. Z-scores were calculated for all variables measured using the questionnaire and scores in excess of 3.29 were identified as outliers. This indicated that one respondent was an outlier in all self-efficacy subscales, reported behaviour scales and the behavioural intention scale. Given that this would mean adjusting almost all of this respondent's scores, it was decided that this participant should be removed. Details relating to outliers in ST-IAT responses are discussed below as this is an important step in Greenwald et al's (2003) *D* score calculation.

Calculating the D score. This was calculated using Greenwald et al's (2003) improved scoring algorithm. The first step involved dealing with extreme cases.

Trials with latencies greater than 10,000ms should be removed and participants who have more than 10% of trials with latency less than 300ms should also be removed. After checking this, no cases met these criteria thus no data were removed. The means for each block were then computed. One pooled standard deviation for all trials in Blocks 2 and 4 and another for Blocks 3 and 5 were calculated. Two mean difference scores were then calculated (between Blocks 2 and 4 and then Blocks 3 and 5). These differences were then divided by the associated pooled standard deviation. Finally, an average of the two resultant values was computed. This resulted in what Greenwald et al. (2003) termed the '*D* score'.

Using published cut-off score guidelines (i.e. Noesk et al., 2007a; Vaughn et al., 2011; Wilson & Scior, 2015), a *D* score ranging between -.16 to -2.00 was classed as negative. A score ranging from -.15 to .15 indicated a neutral implicit attitude. Finally, a score of .16 to 2.00 suggested a positive implicit attitude. In the present study, the scoring algorithm demonstrated that the mean *D* score was -.03. This suggested that teachers had little or no implicit bias towards children with ID. Despite this, it should be noted that scores ranged from -.99 to .89. This indicates great variety in scores with some teachers holding strong positive and negative implicit attitudes. This variability suggests that not all teachers hold the same automatic beliefs. This further raises the question of how these impact reported classroom behaviour.

7.8 Aim 3.2. Relationship between Mainstream Primary Teachers' Explicit and Implicit Attitudes towards Children with ID.

7.8.1 Hypothesis 3.2: Implicit and explicit attitudes will not be correlated.

Descriptive statistics. Table 19 shows means, standard deviations, and bivariate correlation coefficients for the scales used in the study. The means suggested that while the mean implicit attitude *D* score fell within the neutral range, explicit attitudes towards children with ID and towards inclusion were positive. It was also clear that teachers had strong intentions to act inclusively. Further, teachers reported relatively high levels of self-efficacy with the highest score being for instructional strategies efficacy. Scores on the behavioural measures suggested that teachers reported using inclusive teaching strategies frequently, as each of these means was above 4 out of a possible 5. Scores on the non-verbal measure were also high.

Examination of the correlation matrix shows that there was no significant relationship between implicit attitude and teachers' explicit attitude towards disability or inclusion. This suggested that implicit and explicit attitudes were not correlated thus supporting Hypothesis 3.2. Implicit attitudes were also not related to any of the reported inclusive behaviour measure subscales, non-verbal behaviour or self-efficacy variables. Results, however, did indicate a significant correlation between training and implicit attitude. This suggests those who did not report completing any special education training were more likely to have a negative implicit attitude. There was also a significant negative correlation between training and years' experience. This indicates that the fewer years' teaching experience the individual had, the more likely they were to report they had completed special education training. Thus newer teachers had received more inclusion training and this was associated with more positive implicit attitudes. A significant correlation was found between years of experience and explicit attitudes towards disability. The

more years' experience the teachers had, the less positive their explicit attitude towards disability (higher scores on disability attitude measure indicated more negative attitude).

Both explicit attitudes towards disability and attitudes towards inclusion were significantly correlated with each type of self-efficacy (instructional strategies, classroom management and student engagement efficacy), behavioural intention and reports of inclusive teaching (instructional adaptations and academic progress monitoring).

Table 19. *Bivariate Correlations, Means and Standard Deviations of Demographic Variables, Implicit Attitudes, Explicit Attitudes, Self-Efficacy Sub-Types and Reported Inclusive Behaviour*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13	Mean	SD
1.Training		-.25*	-.24*	.03	.00	.-12	-.05	-.06	-.01	-.05	-.09	-.05	.01	1.73	.45
2.Years' Exp			.13	.04	.37**	.12	.04	.09	-.05	.12	.04	.20	-.06	11.19	9.11
3. Implicit A				-.08	-.004	-.13	-.09	-.07	-.11	.09	.04	-.02	.03	-.03	.40
4.Inclusion A					-.42***	.53***	.44***	.46***	.30**	.19	.53***	.46***	.51***	4.65	.62
5.Disability A						-.10	-.33**	-.31**	-.29**	-.06	-.35**	-.31**	-.43***	2.56	.44
6. Intent							.34**	.39***	.20	.14	.44***	.32**	.36**	5.37	.52
7. Tot Beh								.95***	.87***	.19	.59***	.44***	.49***	4.44	.40
8. IA									.67***	.19	.56***	.45***	.44***	4.49	.40
9. AP										.15	.50***	.32**	.46***	4.34	.50
10. Non-Verb											.10	.18	.13	4.27	.54
11. IS_SE												.68***	.59***	7.10	.99
12. CM_SE													.67***	6.78	1.00
13. SE_SE														6.76	1.04

*** $p < .001$. ** $p < .01$. * $p < .05$ Years' Exp= Years' teaching experience; Implicit A= Implicit attitude; Inclusion A= Explicit inclusion attitude; Disability A= Explicit disability attitude; Intent= Behavioural intention; Total Beh= All DIS items included; IA= Instructional

adaptation subscale of the DIS; AP= Academic progress monitoring subscale of the DIS; Non-Verb= Non-verbal behaviour. IS_SE= Instructional strategies efficacy; CM_SE= Classroom management efficacy; SE_SE=Student engagement.

7.9 Aim 3.3. Relationships between Implicit and Explicit Attitudes and Reported Behaviour.

7.9.1 Hypothesis 3.3a: Implicit attitudes predict teachers' reported inclusive classroom behaviours

7.9.2 Hypothesis 3.3b: Explicit attitudes will not be directly related to reported inclusive behaviour.

Given that there was no correlation between implicit attitude and reported inclusive behaviour or non-verbal behaviour, this suggested that implicit attitude would not predict behaviour. Pearson correlation coefficients indicate the strength of a linear association between variables (Field, 2013). It may be the case that the association between implicit attitudes and reported behaviour is curvilinear with strong positive or negative implicit attitudes influencing behaviour and neutral attitudes having no effect. In such situations, curvilinear multiple regressions can be conducted to test the relationship between predictor and outcome. This involves adding a quadratic term in the model in addition to the linear term (Keith, 2006). To do so, the variable which represents the quadratic function (i.e. implicit attitude) is squared. The linear variable and the quadratic variable are then entered in different blocks of the regression model.

Reported inclusive behaviour. Curvilinear regression was used to examine the relationship between implicit attitudes, explicit attitudes (disability attitudes and inclusive attitudes) and teachers' reported inclusive behaviour. Demographic variables (years of experience and training) were entered at Step 1. Implicit attitude and explicit attitudes (both disability and inclusion attitudes) were added at Step 2.

The quadratic term, implicit attitudes squared, was added at Step 3. Assumptions of homoscedasticity were confirmed and errors were normally distributed. Tolerance statistics and the VIF confirmed no issues of multicollinearity in the model. The assumption of independent errors was also met with a Durbin-Watson statistic of 1.83. With regards to checking influential cases, no cases had a standardised residual greater than 2.

Results showed that at Step 1 (see Table 20), demographic variables did not account for a statistically significant proportion of the variance (R^2=.005, p= .850). The inclusion of implicit and explicit attitudes to the model significantly increased R^2 (R^2= .19, R^2_{change}=.18, p= .005). Only teachers' explicit attitudes towards disability were a significant predictor of reported inclusive behaviour (β= -.37 p= .003). When implicit attitudes squared was added to the regression equation, this did not result in a significant increase to R^2 (R^2= .19, R^2_{change}=.006, p= .505). At this Step, only teachers' explicit disability attitudes were independent predictors of reported inclusive behaviour (β= -.39 p=.003). Teachers' implicit attitudes towards children with ID did not significantly predict reported inclusive behaviours however, explicit attitudes towards disability did. Teachers with more positive explicit attitudes towards children with ID were more likely to report using inclusive teaching strategies. These findings do not support Hypotheses 3.3a or 3.3b given that it was expected that implicit and not explicit attitudes would predict reported behaviour.

Table 20. *Implicit and Explicit Attitudes as Predictors of Reported Inclusive Behaviour.*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.005	.005	.16			
Years' Exp				.003	.15	.16
Training				-.07	-.05	-.05
2	.185	.18	4.78**			
Implicit A					-.12	-.13
Disability A					-.37**	-.39**
Inclusion A					.17	.16
3	.190	.006	.45			
Implicit A^2						-.08

***$p <.001$, **$p<.01$, *$p <.05$. Years' Exp= Years of teaching experience; Implicit A= Implicit attitude; Disability A= Explicit disability attitude; Inclusion A= Explicit inclusion attitude; Implicit A^2= Implicit attitude squared.

Reported behaviour subscales. It was decided that since this behaviour measure comprised two subscales, instructional adaptations and academic progress monitoring, it may be useful to examine the impact of both explicit and implicit attitudes on these separately. This would determine if implicit attitudes impacted a particular type of inclusive behaviour. When examining each of the two subscales independently, using the same statistical design; this yielded very similar results, with no indications of a quadratic effect. Both instructional adaptations and academic progress monitoring were significantly predicted by explicit disability attitudes (see Table 21 and 22). Again, this shows that teachers with more positive attitudes towards children with ID were more likely to report using inclusive teaching strategies.

Table 21. *Implicit and Explicit Attitudes as Predictors of Reported Instructional Adaptations*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.10	.01	.35			
Years' Exp				.06	.20	.20
Training				-.07	-.05	-.04
2	.44	.18	4.89**			
Implicit A					-.10	-.11
Disability A					-.36**	-.37**
Inclusion A					.19	.19
3	.44	.001	.10			
Implicit A²						-.04

***p* <.001, **p<.01, *p* <.05. Years' Exp= Years of teaching experience; Implicit A= Implicit attitude; Disability A= Explicit disability attitude; Inclusion A= Explicit inclusion attitude; Implicit A²= Implicit attitude squared.

Table 22. *Implicit and Explicit Attitudes as Predictors of Reported Academic Progress Monitoring*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.01	.01	.28			
Years' Exp				-.09	.03	.05
Training				-.06	-.05	-.04
2	.12	.11	2.74*			
Implicit A					-.13	-.14
Disability A					-.31*	-.33*
Inclusion A					.09	.07
3	.14	.02	1.14			
Implicit A²						-.13

***p* <.001, **p<.01, *p* <.05. Years' Exp= Years of teaching experience; Implicit A= Implicit attitude; Disability A= Explicit disability attitude; Inclusion A= Explicit inclusion attitude; Implicit A²= Implicit attitude squared.

Reported non-verbal behaviour. Finally, curvilinear regression was used to examine whether implicit attitudes predicted teachers' reported non-verbal behaviour. Similar to above, demographic variables (years of experience and training) were entered at Step 1, implicit attitude and explicit attitudes (disability and inclusion attitudes) at Step 2 and the quadratic term, implicit attitude squared, was added at Step 3. Inspection of tolerance statistics and the VIF confirmed that there were no issues of multicollinearity. Further, the assumption of independent errors was also met with a Durbin-Watson statistic of 1.68. No cases had a standardised residual greater than 2.

Results of the regression showed that at Step 1 (see Table 23), demographic variables did not account for a significant proportion of the variance (R^2=.007, p= .793). The inclusion of implicit and explicit attitudes (disability attitudes and inclusion attitudes) at Step 2 also did not account for any variance in non-verbal behaviour (R^2= .04, R^2_{change}=.04, p=.504). The inclusion of implicit attitude squared at Step 3 also did not significantly increase R^2 (R^2= .05, R^2_{change}=.01, p=.377). Thus teachers' implicit or explicit attitudes towards children with ID did not significantly predict reports of their non-verbal behaviour.

Table 23. *Predicting Reported Non-Verbal Behaviour*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.08	.01	.23			
Years' Exp				.09	.10	.11
Training				.02	.06	.07
2	.20	.04	.79			
Implicit A					.09	.09
Disability A					-.07	-09
Inclusion A					.14	.13
3	.23	.01	.79			
Implicit A^2						-.11

[***]*p* <.001, [**]p<.01, [*]*p* <.05. Years' Exp= Years of teaching experience; Implicit A= Implicit attitude; Implicit A^2= Implicit attitude squared.

7.9.3 Hypothesis 3.3c: self-efficacy moderates the relationship between teacher implicit attitudes and inclusive classroom behaviours.

Hayes' (2013) PROCESS macro was used to examine the moderating effect of each type of self-efficacy (instructional strategies, classroom management and student engagement) on the relationship between implicit attitudes and reported inclusive behaviour (total behaviour, instructional adaptations, academic progress monitoring and non-verbal). This showed borderline significance of classroom management self-efficacy as a moderator in the relationship between implicit attitude and reports of academic progress monitoring of children with ID (β= .22, 95% CI [-.03, .47], *t*= 1.70, *p*= .093). Follow up analysis using simple slopes indicated that when classroom management self-efficacy was low, there was a borderline significant relationship between teachers' implicit attitude and reports of monitoring the child's academic progress (β= -.36, 95% CI [-.76, .04], *t*= .20, *p*= .076). This partially supports Hypothesis 3.3c as it shows that those who scored lower on

classroom management efficacy had stronger relationships between implicit attitudes and reported behaviour. No other moderating effects of self-efficacy variables on reported total inclusive behaviour, instructional adaptations, academic progress monitoring and non-verbal was found.

7.9.4 Explicit disability attitudes, self-efficacy and intention as predictors of reported inclusive behaviour.

Although explicit disability attitudes predicted reported inclusive behaviour, much of the variance remained unaccounted for. This suggested that variables other than explicit disability attitudes impact teachers' reported inclusive behaviour. As Study 2 found instructional strategies self-efficacy to be the most important predictor of reported inclusive behaviour, this was included in the model. TPB argues for the importance of behavioural intentions. Although Study 1 found this to be non-significant after the inclusion of self-efficacy, this was included in order to check the effects of intention when using a different measure and sample. Linear regression, rather than curvilinear, was used to assess the predictive validity of explicit attitudes given that Study 1 and 2 found linear relationships between explicit beliefs and reported behaviours.

Four multiple linear regressions were conducted to determine whether explicit disability attitudes, inclusive intentions and instructional strategies self-efficacy predicted reported total inclusive behaviour (see Table 24), instructional adaptations (see Table 25), academic progress monitoring (see Table 26) or non-verbal behaviour (See Table 27). For each of these, demographic variables (years of experience and training) were entered at Step 1. Explicit disability attitudes were

added at Step 2. Inclusive intentions were added at Step 3 and instructional strategies self-efficacy was added at Step 4. For all models, data were found to meet the assumptions of multiple regression. Linearity was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. No issues were detected. Multicollinearity was assessed using tolerance statistics and VIF, all of which were within the cut-off points. Finally, Durbin-Watson statistics showed that errors were independent. Standardised residual, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the acceptable ranges for each model, suggesting there were no influential cases.

Results of the regression showed that for total behaviour and instructional adaptations, no demographic variables were significant predictors. Explicit disability attitude and inclusive intentions were significant predictors until instructional strategies self-efficacy was included in the model. At this Step, only this efficacy variable was a significant predictor of reported inclusive behaviours. This suggests a mediational model in which instructional strategies self-efficacy mediated the relationship between explicit disability attitudes and reported behaviour and intentions and reported inclusive behaviour. For reported academic progress monitoring, explicit disability attitude was a significant predictor until self-efficacy was included in the model. At this point, only this variable was significant. There were no significant predictors of reported non-verbal behaviour.

Table 24. *Predicting Total Reported Behaviour with Explicit Attitudes, Intention and Instructional Strategies Self-Efficacy.*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.004	.004	.14				
Years' Exp				.04	.19	.15	.09
Training				-.04	.00	.02	.03
2	.14	.14	11.85**				
Disability A					-.40**	-.36**	-.18
3	.21	.07	6.56*				
Intention						.27*	.07
4	.39	.18	20.33***				
IS_SE							.50***

*** $p < .001$, **$p < .01$, *$p < .05$. Years' Exp= Years of teaching experience;

Disability A= Explicit disability attitude; IS_SE= Instructional strategies efficacy.

Table 25. *Predicting Reported Instructional Adaptation with Explicit Attitudes, Intention and Instructional Strategies Self-Efficacy.*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.01	.01	.37				
Years' Exp				.08	.24	.18	.14
Training				-.04	.001	.03	.03
2	.15	.14	12.21**				
Disability A					-.41**	-.36**	-.20
3	.25	.10	9.19**				
Intention						.22**	.14
4	.39	.14	15.92***				
IS_SE							.45***

*** $p < .001$, **$p < .01$, *$p < .05$. Years' Exp= Years of teaching experience;

Disability A= Explicit disability attitude; IS_SE= Instructional strategies efficacy.

Table 26. *Predicting Reported Academic Progress Monitoring with Explicit Attitudes, Intention and Instructional Strategies Self-Efficacy.*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.002	.002	.08				
Years' Exp				-.04	.08	.05	-.001
Training				-.03	-.001	.01	.02
2	.09	.08	6.68*				
Disability A					-.31*	-.29*	-.12
3	.11	.02	1.66				
Intention						.15	-.05
4	.27	.17	16.10***				
IS_SE							.50***

*** $p <.001$, ** p<.01, * $p <.05$. Years' Exp= Years of teaching experience; Disability

A= Explicit disability attitude; IS_SE= Instructional strategies efficacy.

Table 27. *Predicting Reported Non-Verbal Behaviour with Explicit Attitudes, Intention and Instructional Strategies Self-Efficacy.*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β	Step 4 β
1	.02	.02	.61				
Years' Exp				.12	.16	.14	.13
Training				-.02	-.01	-.002	-.002
2	.03	.03	.72				
Disability A					-.11	-.08	-.08
3	.05	.05	1.49				
Intention						.14	.14
4	.05	.05	.004				
IS_SE							.01

*** $p <.001$, ** p<.01, * $p <.05$. Years' Exp= Years of teaching experience; Disability

A= Explicit disability attitude; IS_SE= Instructional strategies efficacy.

Indirect effect of self-efficacy. Mediation analyses were conducted using

Hayes' (2013) PROCESS macro to examine the mediating role of instructional

strategies self-efficacy in the relationship between explicit disability attitudes,

intentions and total inclusive behaviour and reported instructional adaptations.

Results showed that instructional strategies self-efficacy mediated the relationship between intentions and total reported inclusive behaviour (β= .18, BCa CI [.10, .33]), representing a medium effect size (Preacher & Kelley, 2011) κ^2= .23, 95% BCa CI [.13, .39]. Further, instructional strategies self-efficacy also mediated the relationship between intentions and reported instructional adaptations (β= .16, BCa CI [.08, .31], κ^2= .21, 95% BCa CI [.11, .37] and reported academic progress monitoring (β= .21, BCa CI [.08, .31], κ^2= .21, 95% BCa CI [.11, .37]. Teachers' intentions towards acting inclusively first influenced instructional strategies efficacy beliefs and it is this that then impacts the reported behaviour.

It was also found that instructional strategies efficacy mediated the relationship between explicit disability attitudes and total reported inclusive behaviour (β= -.17, BCa CI [-.34, -.07], κ^2= .19, 95% BCa CI [.08, .35]; explicit disability attitudes and reported instructional adaptations (β= -.17, BCa CI [-.33, -.07], κ^2= .18, 95% BCa CI [.08, .34]; and explicit disability attitudes and reported academic progress monitoring (β= -.18, BCa CI [-.36, -.07], κ^2= .16, 95% BCa CI [.06, .30]. This suggests that similar to intentions, teachers' explicit disability attitudes towards acting inclusively first influenced instructional strategies efficacy beliefs and it is this that then impacts the reported behaviour. See Figure 5.
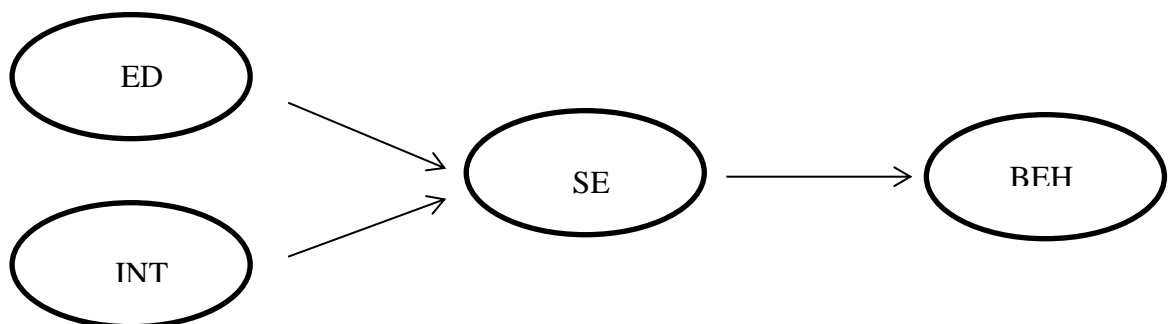
Figure 5. Instructional Strategies Self-Efficacy as Mediator in the Relationship Between Explicit Disability Attitudes, Intentions and Reported Inclusive Behaviour

ED= Explicit disability attitude; INT= Intention; SE= Instructional strategies efficacy; BEH= Reported inclusive behaviour.

7.10 Discussion Study 3

Study 3 aimed to extend the findings of Study 1 and 2 by examining the impact of both explicit and implicit teacher beliefs on their reports of inclusive teaching practices for children with ID. Results showed that on average, teachers held a neutral implicit attitude towards children with ID. There was however, great variability in scores with some teachers' demonstrating strong negative and positive implicit attitudes. Those who did not report completing any special education training were more likely to have a negative implicit attitude. Implicit beliefs were not related to any explicit beliefs (disability attitudes, inclusion attitudes, self-efficacy variables or behavioural intentions), reported inclusive teaching practices or non-verbal behaviour. Despite this, the relationship between implicit attitudes and reported behaviour was strongest when teachers' classroom management self-efficacy was low.

With regards to explicit beliefs, explicit attitudes towards disability (i.e. attitudes towards children with ID) were a significant predictor of reported inclusive behaviour. Thus teachers with more positive explicit disability attitudes were more likely to report using inclusive teaching strategies. Investigating the predictive validity of self-efficacy and intentions showed that similar to Study 1, intentions were a predictor of reported inclusive behaviour until self-efficacy was included in the model. At this point, only self-efficacy was a significant predictor of reported behaviour. In line with Study 2, instructional strategies self-efficacy (i.e. perceived

ability to design and implement activities and assessments to aid student learning) predicted teachers' reported inclusive behaviour. This variable also mediated the relationship between teachers' intentions and reported behaviours and between teachers' explicit disability attitudes and reported behaviours. Intentions and explicit disability attitudes predicted reported behaviour indirectly through instructional strategies self-efficacy. These findings will be discussed in more detail in the following sections.

7.10.1 Teachers' implicit beliefs towards children with ID.

The results showed that teachers held a mean neutral implicit attitude towards children with ID. Teachers therefore had little or no implicit bias towards children with ID. This finding is promising given that it suggests teachers do not demonstrate prejudice towards this group of learners. This supports Markova et al (2015) who also found preservice teachers held an overall neutral implicit attitude toward students with additional support needs from ethnic minority backgrounds. It should be noted, however, that studies which have examined mean implicit disability attitudes in populations other than teachers commonly find negative implicit attitudes towards disability (Vaughn et al., 2011; Wilson & Scior, 2014, 2015). This suggests that there may be something different about the beliefs of teachers, perhaps as a result of contact with children with disabilities.

As teachers will have experience of working with children with disabilities throughout their career, this contact may enhance their implicit beliefs thus giving them different views from that of the general population. However, others have reported that contact does not influence implicit attitudes towards disability (Hein et

al., 2011; Pruett & Chan, 2006; Wilson & Scior, 2015) and thus an alternative explanation is needed. It is possible that the teaching profession trains individuals to better understand children who experience difficulties in school or that it attracts people who do not hold stereotyped societal beliefs about learners, and thus teachers do not adopt negative automatic beliefs towards children with disabilities.

The results though showed that some teachers did demonstrate strong positive and negative implicit attitudes towards children with ID. Teachers who did not report completing any special education training were more likely to have a negative implicit attitude. This suggests that special education training may have a positive impact on teachers' automatic beliefs about children with ID. This relationship between implicit attitudes and training is interesting given that findings examining the impact of training on explicit inclusive attitudes have been mixed (Brown, Walsh, Hill, Cipko, 2008; Campbell, Gilmore, & Cuskelly, 2003; Tait & Purdie, 2000). They suggest that it may be beneficial to consider implicit beliefs when assessing the usefulness of special education training. Teacher education may be effective in reducing automatic beliefs. This finding also relates to the point above that teachers' thinking about disability differs from the general population. Teacher special education training may be effective in changing individuals' biased perceptions about disability.

It should be noted that Hornstra et al (2010) found teacher implicit attitudes towards children with dyslexia to be negative. Although the present study examined attitudes towards children with ID, the findings do not support that of Hornstra et al. Hornstra et al however did not implement the IAT (or ST-IAT) so that not only did the task differ from that in the present study but also the method of scoring

responses. Mean response times were used which as discussed in Section 7.6.3, are not an effective measure of implicit attitudes due to differences in response speeds between participants. This makes comparison of results difficult. Given that reliability, internal consistency and test-retest reliability of IAT procedures has been confirmed (Lane et al., 2007; Noesk et al., 2007; Perugini, 2005; Rudman, 2011), the present study used the currently most validated measure of implicit attitudes.

Despite this, it is important to acknowledge that this was the first test of ST-IAT to understand teachers' implicit attitudes towards children with ID. Although the reliability of the ST-IAT was confirmed, there is still an issue of construct validity in that it may be measuring something other than implicit beliefs or did not measure these as well as was hoped. Despite this, the design of the ST-IAT was developed using standard IAT and ST-IAT procedures (Greenwald et al, 2003; Karpinski, & Steinman, 2006; Rudman, 2011; Wigbolduset al., 2004). Nosek et al. (2007b) discussed instructions regarding the selection and design of stimuli materials; order and length of response blocks; scoring; and how to control for extraneous influences on scores. It was argued that in following these, the internal validity of the measure would be increased. As detailed in the description of the ST-IAT (see Section 7.4), the researcher followed these carefully to ensure the measure was similar to those which have been found to successfully measure implicit attitudes. Future research is needed to support the usefulness of this task in measuring both teacher and the wider populations' implicit attitudes towards children with ID. There is a need to ensure the construct validity of the measure.

7.10.2 Relationship between implicit and explicit beliefs

The results showed that implicit and explicit attitudes were not correlated. Thus teachers' automatic beliefs were not related to their self-reported attitudes. This is consistent with research across a range of psychological domains (Brauer, Wasel, & Niedenthal, 2000; Dovidio, Kawakami, & Beach, 2001; Fazio et al., 1995; Wilson & Scior, 2015). It has previously been argued that this may be a result of self-presentational bias (i.e. self-reporting in a socially desirable manner; Moorman & Podsakoff, 1992; Preutt & Chan, 2006). Thus teachers may have an explicit attitude similar to that of their implicit belief but choose to answer the questionnaire in a way that appears more favourable. Despite this, Hofmann, Gawronski, Gschwendner, Le, and Schmitt's (2005) meta-analysis found no evidence that social desirability impacted the correlation between implicit and explicit measures. Instead, it was argued that the relationship is influenced by the extent to which the individual has motivation or cognitive capacity to retrieve additional information from memory. Correlations will be higher when the attitude object is associated with a higher degree of spontaneity but lower when higher order thought processes are elicited. The lack of correlation in the present study therefore indicates that when asked to report attitudes towards disability, teachers use a more deliberative thought process than spontaneous. This suggests that if research can identify factors teachers consider when determining their attitude towards disability, there will then be scope to influence such attitudes.

The results also indicated that teachers who have more years' experience and are more positive towards disability are more likely to also report being positive towards inclusion of children with ID in mainstream schools. Previous research often examines teachers' experience with individuals with disabilities as a predictor of

inclusive attitudes (Forlin, Tait, Carroll, & Jobling, 1999; McGregor, & Campbell, 2001; Parasuram, 2006). These studies often show that the more experience a teacher has, the more positive his or her explicit attitude will be towards inclusion. Although the current study also supported this, attitudes towards disability were an additional factor impacting teachers' inclusive beliefs. This suggests the need for teacher education to consider how disability attitudes may be formed and thus changed. Training should take into account the need to educate teachers on disability in general in addition to teaching about inclusion. In doing so, training may become more successful in changing teachers' attitudes towards inclusion.

In contrast to the inclusion attitude finding, the more years' experience the teachers had, the less positive their attitude towards disability. It may be that teachers' with more experience come to appreciate the benefits of inclusion and thus feel positive towards this. However, those with more years' experience may also be more aware of the difficulties children with ID experience as a result of the disability and thus have less positive disability attitudes. Again, this suggests a need for training to enhance teachers' disability attitudes before targeting inclusive beliefs.

7.10.3 Relationship between implicit attitudes and reported behaviour

The present study showed that teachers' implicit attitudes did not predict their reports of inclusive classroom behaviour or non-verbal behaviour. Implicit attitudes still did not predict behaviour when examining the inclusive behaviour subscales separately (i.e. reports of using instructional adaptations or monitoring academic progress). Evidence to suggest that implicit attitudes predict behaviour is mixed across domains (Fazio & Olson 2003; Nosek et al., 2007b). In some cases, the

IAT has been found to have higher predictive validity than self-report measures in predicting behaviour, however, in other cases, the opposite is true (Poehlman, Uhlmann, Greenwald, & Banaji, 2007).

The present study found that stronger relationships between implicit attitudes and reported behaviour were identified in teachers who scored low in classroom management self-efficacy. Thus the relationship between implicit attitudes and academic progress monitoring was strongest when teachers' classroom management self-efficacy was low. This suggests that when teachers feel they are unable to maintain an orderly and organised classroom environment for students and thus perhaps feel out of control of their environment, their automatic beliefs influence their reported inclusive behaviours. This relates to Kumar et al's (2015) argument that perceiving little control of the classroom leads to cognitive overload which reduces the chance that teachers' will use effortful, deliberative processing when responding to students. Given that self-efficacy is a motivational variable (Rhodes & Courneya, 2003c, 2004; Williams & Rhodes, 2014), this is in line with the MODE model's argument that if the individual is low in motivation or opportunity, implicit attitudes are activated (Fazio, 1990, 2001; Fazio & Towles-Schwen 1999; Olson & Fazio, 2009). Given teachers low on this sub-type of self-efficacy may be more vulnerable to the impact of implicit beliefs on their behaviours with children with ID, this suggests a need, among some teachers, for support to bolster their self-efficacy in this context. If this can be raised, teachers may feel more in control of the classroom and as a result, take more time to consider how they can make appropriate adaptations for the child with ID rather than allowing automatic beliefs to guide behaviour.

One reason for the lack of relationship between implicit attitudes and reported behaviour may relate to the point that in general, teachers' demonstrated a neutral implicit attitude. Goodall and Slater (2010) argued that when individuals do not have strong enough attitudes, these are not automatically activated in the situation and thus require effortful retrieval. Thus it may be the case that teachers' implicit beliefs were not strong enough to have any effect on behaviour and therefore they must use deliberative thinking to inform their behavioural decision. Indeed, it has been argued that when the domain of interest is socially sensitive, the likelihood that motivational factors will be evoked to determine the behaviour increases (Dovidio & Fazio 1992). Given that inclusion of children with ID is a sensitive issue; teachers may be more motivated to deliberate over their behaviour.

Research suggests that implicit attitudes are commonly more predictive of spontaneous than deliberative behaviours (Dovidio et al., 1997; Dovidio et al., 2002; Karpinski & Hilton, 2001; McConnell & Leibold, 2001; Spalding & Hardin, 1999). While there was reason to hypothesise that implicit attitude would predict reported inclusive teaching practices which are a deliberative behaviour, the study also assessed self-reports of non-verbal behaviour as this may tap into teachers' spontaneous behaviours. Results showed that implicit attitudes did not predict non-verbal behaviours. Thus there was no relationship between teachers' automatic beliefs and their non-verbal communication with children with ID. The lack of relationship between implicit beliefs and reported inclusive behaviour or non-verbal behaviours is perhaps a positive finding given that it suggests teachers do not allow automatic beliefs to determine their teaching practices. Teachers are engaging in effortful decision making when working with children with ID.

7.10.4 Relationship between explicit attitudes and reported behaviour

The results showed that until the inclusion of instructional strategies self-efficacy, explicit disability attitudes predicted reported inclusive behaviour. Thus teachers with more positive explicit disability attitudes were more likely to report using inclusive strategies for children with ID. According to the MODE model then, this would suggest that teachers were high in motivation or opportunity to work with learners with ID. Indeed, mean scores suggested that teachers' scored high on both intentions and self-efficacy, variables that have been shown to represent motivation (Williams & Rhodes, 2014). This is again, a positive finding which suggests teachers are motivated to use inclusive teaching strategies.

The current findings would appear to weaken TPB's argument that there is no direct relationship between attitudes and behaviour (Ajzen, 1991). Despite this, the present study found a relationship between attitudes towards the attitude object (i.e. children with ID) and reported behaviour. TPB assesses attitudes towards the behaviour (i.e. attitudes towards inclusion) and argues that there is no direct relationship between these. The current findings supported this as results showed inclusive attitudes did not predict teachers' reported behaviour. This is interesting given that TPB does not acknowledge the importance of explicit attitude object attitudes. There is a need to consider their inclusion in TPB.

The results showed that similar to Study 1, teachers' intentions predicted reported behaviour until instructional strategies efficacy was included in the model. At this point, only this efficacy variable was important in predicting reported inclusive teaching practices. This supports the findings of Study 1 which

demonstrated the importance of self-efficacy over intention in teachers' inclusive behaviour and Study 2 which showed instructional strategies efficacy was the most important type of efficacy. The current study extended this to show that this type of self-efficacy mediated the relationship between both explicit disability attitudes and reported behaviour and intention and reported behaviour. Teachers' explicit disability attitudes and intentions therefore influenced reported behaviour indirectly through instructional strategies efficacy. This suggests teachers engage in a deliberative thought process in which they consider their attitude towards children with ID and decide whether they are willing to use inclusive strategies for these learners. They then consider if they have the ability to design activities and assessments for children with ID (i.e. instructional strategies self-efficacy). When teachers' feel able to make such adaptations, they are more likely to act inclusively toward children with ID. Previous research has demonstrated a mediating role of self-efficacy in the intention and exercise behaviour relationship (Sniehotta, Scholz, & Schwarzer, 2005). The present study extends this to show that teacher self-efficacy also acts as a mediator in the relationship between teachers' inclusive intentions and reported behaviour.

Considering the findings in relation to the MODE model, it would be argued that the inclusion of children with ID requires teachers to use effortful decision making processes rather than relying on automatic beliefs. An interesting point relates to the notion that classroom management efficacy played a role in teachers' automatic beliefs whereas instructional strategies efficacy impacted explicit beliefs. This confirms the argument that implicit and explicit beliefs involve two different types of cognitive processing which are influenced by different factors (Fazio, 1990;

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Hofmann et al., 2005). This again provides an explanation for the lack of correlation between the two.

7.10.5 Summary

The present study investigated the impact of teacher implicit and explicit beliefs towards children with ID on reported inclusive behaviour. This was important given that the results from Study 1 and 2 suggested that teachers' automatic beliefs may play a role in their use of inclusive teaching practices. Results showed that teachers implicit attitude towards children with ID did not relate to any explicit beliefs or reported inclusive behaviour. However, stronger relationships between implicit attitudes and reported behaviour were identified in teachers who werre low in classroom management self-efficacy. This suggests the need to support teachers in becoming more confident in their ability to teach a class which includes a child with ID. This may prevent teachers acting on automatic beliefs.

The significance of instructional strategies efficacy in the prediction of reported inclusive behaviour supported the findings of Study 1 and 2 and suggested that teachers engage in a deliberative thought process when considering children with ID rather than performing behaviours based on automatic beliefs. This is an encouraging finding given that with support, teachers can be educated as to how to use their thinking to allow them to feel more able to deal with learners with ID.

Chapter 8 - General Discussion

8.1 Aims of Thesis

The overarching aim of this thesis was to examine the impact of social cognitive factors on teachers' reported inclusive behaviours towards children with ID. This was investigated in a series of three studies, each addressing aspects of the social cognition-behaviour relationship. Study 1 applied the Theory of Planned Behaviour (TPB; Ajzen, 1991) to examine the extent to which teachers' beliefs and personality predicted their reported inclusive behaviour. Given the success of TPB in other settings, this provided a good starting point with regards to selecting which beliefs should be investigated. Where previous research has implemented TPB to examine teachers' inclusive behaviour, as explained in Chapter 3, these have not rigorously tested the theory. Thus an additional aim of Study 1 was to test the applicability of TPB in an education setting using a prospective design and questionnaire items recommended by Ajzen (1991). The two-component TPB was therefore tested and subsequently, predictors of self-efficacy given that this was the most important predictor of reported behaviour

Study 2 then examined sources of teachers' self-efficacy (instructional strategies, classroom management and student engagement self-efficacy) in relation to teaching children with ID. In his social cognitive theory (SCT), Bandura (1986, 1994) argued that the environment influences individuals' self-efficacy. The findings from Study 1 supported this showing that teachers' beliefs regarding other staff (i.e. descriptive norm) and perceptions of the environment (i.e. controllability) predicted teachers' self-efficacy. Based on Bandura's assertions and the findings from Study 1, Study 2 investigated the impact of school ethos variables (collective efficacy and

school climate perceptions) and mastery experiences in predicting these beliefs. Not only did this further contribute to the thesis aim but also extended the findings of Study 1.

Study 3 added to the thesis aim by measuring teachers' implicit attitudes towards children with ID. This was achieved by using Fazio's (1990) Motivation and Opportunity as Determinants (MODE) model which argues that implicit beliefs activate spontaneous processing and rapid initiation of behaviour. TPB cannot account for how implicit beliefs influence behaviour. In addition to this, Study 3 also measured teachers' explicit beliefs which involve a more deliberative, effortful thought process and is the premise of TPB. The relationship between these beliefs was examined as well as how these related to reported inclusive classroom behaviours. The study also further examined the role of self-efficacy which both Studies 1 and 2 had found to be an important predictor of teachers' reported behaviour.

The research will now be summarised in order to highlight how each study contributed to the thesis' aim. The chapter will then move to discuss the key findings of the research, how these findings fits with previous research and what the implications for both theory and practice are. Following this, the methodological limitations will be acknowledged and suggestions for future research will be given.

8.2 Summary of the Research

As discussed in Chapter 5, Study 1 examined teachers' beliefs and reported behaviour towards working with children with ID. The study was the first to conduct such a test using the two-component TPB. The study also tested the role of teacher personality on reported beliefs and behaviour. As reported in Chapter 5, the results

showed that instrumental attitudes, descriptive norm, self-efficacy and neuroticism predicted teachers' intentions to use inclusive strategies. Further, conscientiousness had indirect effects on intentions through TPB variables. Such findings indicated that teachers therefore considered how beneficial the behaviour would be, whether others were performing the behaviour and if they have the ability to themselves perform the behaviour when forming their inclusive intentions. Further, teachers scoring higher on neuroticism were also more likely to have positive intentions towards working with children with ID.

With the inclusion of self-efficacy, intention however, was not a significant predictor of teachers' reported classroom behaviour, a finding that is inconsistent with TPB. TPB argues that self-efficacy is a sub-component of perceived control and that behavioural intention should be the most important predictor of behaviour. Instead, the current research argues that self-efficacy is the strongest predictor of teachers' reported inclusive behaviour. Teachers' perception of their own capabilities was the most important predictor of their reported inclusive behaviour. The importance of self-efficacy in teachers' reported inclusive behaviours suggested that strengthening these beliefs may increase willingness to use inclusive teaching strategies. In order to understand what impacts self-efficacy and thus move closer to understanding how such beliefs might be changed, Study 1 then examined which TPB components predicted teachers' self-efficacy. The findings highlighted experience, other teachers, the school environment and attitudes to be important in the prediction of self-efficacy. Such findings bring us closer to an understanding of how an intervention to enhance teachers' inclusive teaching practices would be developed (i.e. through targeting self-efficacy and its predictors). There was,

however, room for further examination of efficacy beliefs out with a TPB framework.

As discussed in Chapter 6, Study 2 aimed to further the findings of Study 1 by examining the role of school ethos (collective efficacy and school climate perceptions) and mastery experiences in the prediction of three sub-types of self-efficacy (classroom management, instructional strategies and student engagement). This was based on Bandura's SCT and Study 1's findings which both argued for the role of the environment in teachers' self-efficacy. Results showed that collective efficacy was the strongest predictor of all three sub-types of self-efficacy. Teachers' perceptions of the overall school climate and mastery experience also predicted classroom management and instructional strategies self-efficacy. Further, collective efficacy mediated the relationships between perceptions of school climate and teacher self-efficacy beliefs.

The results of Study 2 suggested that, in line with SCT, the working environment surrounding teachers is crucial to the development of efficacy beliefs. The findings also indicated that only instructional strategies efficacy was a significant predictor of reported inclusive behaviour. Given the importance of this belief to reported teaching behaviour, it was then important to consider which school climate factors predicted instructional strategies efficacy. The findings indicated that the school climate factor, academic emphasis, predicted instructional strategies efficacy. Thus teachers who believed that their school had an expectation of high achievement where students work hard, seek extra work and respect those who get good grades had higher instructional strategies efficacy for working with children with ID.

The findings from Study 1 and 2 indicated that with the inclusion of self-efficacy, there was no relationship between teachers' intentions and their reported inclusive behaviour, a finding which is inconsistent with TPB. This suggested that teachers may not use effortful, deliberative thought processes when considering whether to act inclusively or if they do, this becomes overwhelmed by situational imperatives. There was a need then, to assess teachers' automatic beliefs towards children with ID.

As discussed in Chapter 7, Study 3 used a novel test of the Single Target Implicit Association Test (ST-IAT; Wigboldus, Holland, & van Knippenberg, 2004) to measure teachers' implicit attitudes towards children with ID. The results showed that the mean D score (the algorithm used to calculate implicit attitude scores), suggested teachers held a neutral implicit attitude towards children with ID. Despite this, scores were varied with some teachers having a negative implicit attitude while others had a positive implicit attitude. Those who did not report completing any special education training were more likely to have a negative implicit attitude. Despite this, teachers' implicit attitude towards children with ID did not relate to any explicit beliefs or reported inclusive behaviour. However, stronger relationships between implicit attitudes and reported behaviour were identified in teachers who scored low in classroom management self-efficacy. Similar to Study 2, only instructional strategies self-efficacy predicted teachers' reported inclusive behaviour.

Taken together, the studies suggest the importance of efficacy beliefs in teachers' use of inclusive strategies and bring us closer to understanding how these beliefs are fostered. School climate impacts on teachers' beliefs and self-perceptions. Teachers' perceptions and beliefs in turn impact on inclusive practices. The findings

have contributed to the thesis aim by demonstrating the importance of teachers' self-efficacy beliefs in their use of reported inclusive behaviours. Further, the importance of mastery experience and perceptions of the school climate in these beliefs were highlighted. Finally, the results showed that teachers are not guided by their automatic beliefs. These key findings, their fit with previous research and their implications will now be further discussed.

8.3 Key Findings and Their Implications

8.3.1 Teachers' efficacy beliefs are key. Across the three studies, teachers' self-efficacy beliefs were found to be the most important predictor of reported inclusive behaviours for children with ID. Study 1 demonstrated this through the use of TPB while Studies 2 and 3 implemented a scale specifically designed to measure teacher self-efficacy and again, found this belief to be important for reported use of classroom adaptations. Thus teachers' perceived ability that they can successfully teach a child with ID influences the likelihood that they will implement curricular, instructional or resource adaptations. Those who report higher feelings of efficacy are more likely to work successfully with children who struggle to learn.

This finding contributes further evidence that suggests teachers' self-efficacy is a powerful predictor of how a teacher will act (e.g., Gibbs, 2003). Efficacy beliefs have been found to predict the goals teachers set, time spent planning, their persistence in failure situations, willingness to use new teaching methods and take risks with the curriculum (Gibson & Dembo, 1984; Klassen, Tze, Betts, & Gordon, 2011; Tschannen-Moran et al., 1998). Given that the inclusion of a child with ID may require the teacher to engage in all of these behaviours (i.e. spend longer planning, be persistent in challenging situations and adapt the curriculum to fit the

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child), it is clear why efficacy beliefs are also important to the implementation of inclusive behaviours.

Such a finding also echoes that of previous research which has found efficacy beliefs to play a key role in the success of inclusion more broadly (Brady & Woolfson, 2008; Hofman & Kilimo, 2014; Leyser, 2002; Soodak & Podell, 1994; Sharma et al., 2012; Vaz et al., 2015; Woolfson, & Brady, 2009). It is common for studies though to test a unidimensional self-efficacy construct which makes it difficult to identify which sub-type of self-efficacy belief is important (Knoblauch & Woolfolk Hoy, 2008; MacFarlane & Woolfson, 2013; Tschannen-Moran & Hoy, 2004). The thesis therefore extends these findings by identifying instructional strategies self-efficacy as the most predictive efficacy belief in teachers' reported use of classroom adaptations for children with ID. The importance of instructional strategies efficacy indicated that teachers considered how able they are to design and implement inclusive activities for the child when making the decision with regards to whether they would act inclusively. This was more predictive than efficacy beliefs relating to classroom management or student engagement.

The importance of self-efficacy also raises the question as to why teachers with higher self-efficacy are more likely to act inclusively. One explanation for this relates to attributions regarding the child's ability. Teachers with low efficacy attributed students' problems to internal factors such as lack of ability whereas those with higher efficacy attributed the child's difficulties to external factors such as the curriculum or teaching practices (Brady & Woolfson, 2008; Woolfson & Brady, 2009). Teachers with higher efficacy therefore believe they have the capacity to arrange favourable learning circumstances, such as curricular adaptations, to help the

child learn. This suggests that the relationship between self-efficacy and behaviour may be mediated by other socio-cognitive beliefs.

It is also important to consider why teacher self-efficacy, rather than behavioural intention, predicts teachers' reported inclusive behaviour. It has been argued that an individual's persistence and effort will be dependent on his or her perceived efficacy (Bandura, 1992; Bandura & Cervone, 1983). Those with high self-efficacy are more like to exert effort to carry out a particular behaviour. Study 1 and 2 demonstrated the importance of self-efficacy over intention (i.e. teachers' willingness to exert effort). Study 3 expanded on this to show that self-efficacy mediated the relationship between intentions and reported behaviour. This supports the argument of Bandura (1992) and Bandura and Cervone (1983) as it suggests teachers' self-efficacy may be required in order to exert the effort to turn their intentions into behaviour.

The thesis drew upon the Theory of Planned Behaviour (TPB) which argues that enactment of behaviour is based on the individual's behavioural intention. Despite this theoretical proposition, it was consistently found across the three studies that self-efficacy, rather than intentions, was the most important predictor of reported behaviour. No relationship between teachers' intentions and reported behaviour was found. The lack of a link between intentions and reported behaviour therefore has implications for TPB. The theory may not apply directly to the examination of teacher reported behaviours, at least in the context of working with children with ID. A similar finding was reported by Yan and Cheng (2015) who found no relationship between teachers' intentions and behaviours regarding formative assessment suggesting again that the relationships between TPB components may differ when

applied to teaching behaviours than when applied to health or social behaviours. This may be a result of the target behaviour being a work rather than the personal behaviour which is typically measured in TPB research carried out in health and social settings. Willingness to perform a behaviour (i.e. the behavioural intention) may be enough to predict performance of a health behaviour such as healthy eating, exercising or safe driving, however, the present thesis argues that enactment of a teaching work-related behaviour relies on the individual teacher believing in their ability to do so.

Within the original TPB, intention is hypothesised to mediate the relationship between attitudes, subjective norm, PBC and behaviour. Although intention and self-efficacy are distinct components, research has suggested both have overlapping characteristics (Klassen & Tze, 2014; Rhodes & Courneya, 2003c, 2004; Williams & Rhodes, 2014). The current research demonstrated that intention and self-efficacy may be influenced by similar cognitions but that it is self-efficacy which is most important in the prediction of teachers' inclusive behaviours. Such a finding suggests an adapted TPB framework for this particular population and behaviour. In this adapted version, instrumental attitudes, descriptive norms, controllability and years' experience predict teachers' self-efficacy and this variable then predicts reported behaviour (see Figure 3 in Chapter 5). This provides a better framework for understanding teachers' beliefs and reported behaviour when teaching children with ID.

The role of teachers' self-efficacy beliefs has implications for practice. Teachers should be provided with knowledge with regards to inclusive education and educated as to how to use their thinking to allow them to feel more able to deal with

learners with ID. This may involve encouraging reflection on their current thinking and actions. Self-reflection is important in order to determine if the individual feels that he or she is high in efficacy (Gibbs, 2003). However, this raises the question as to how to support teachers who do not feel high in efficacy. In-service teacher training should therefore focus on developing awareness of self-efficacy and how to enhance it. Changing beliefs is difficult (Chatzisarantis & Hagger, 2005; Hardeman et al., 2002) so raising self-efficacy may be challenging. This brings about the need to consider what factors may impact teachers' self-efficacy beliefs and thus introduces the second key finding of the thesis; the importance of school ethos and mastery experience in teachers' efficacy beliefs.

8.3.2 Important predictors of teachers' self-efficacy

School ethos. The thesis identified teachers' collective efficacy and school climate perceptions as important to their self-efficacy beliefs**.** This was first noted in Study 1 as descriptive norm (i.e. the belief that other teachers are acting inclusively) and controllability (i.e. whether environmental factors facilitate or hinder the behaviour) predicted teachers' self-efficacy. Thus teachers' considerations of other staff and environmental factors were important in determining teachers' levels of self-efficacy. This was further examined in Study 2 whereby it was confirmed that school ethos (collective efficacy and teachers' perceptions of the school climate) predicted self-efficacy beliefs. This relationship was mediated by collective efficacy. Beliefs regarding the school climate were therefore related to perceptions of the ability of the staff as a whole to work with children with ID and this influenced teachers' self-efficacy.

In line with SCT which argues for the role of the environment, the findings indicated that the school environment is crucial in enabling teachers to feel able to work with children with ID. The school climate can allow teachers to feel that together, they are capable of successfully teaching children with ID thus enhancing collective efficacy. This then feeds into teachers' self-perception, viewing themselves as more able to deal with learners with ID. These findings extend previous research which has reported a link between teachers' school climate perceptions and self-efficacy towards working with children with disabilities (Brownell & Pajares, 1999; O'Toole & Burke, 2013; Roll-Pettersson, 2008; Weisel & Dror, 2006), by identifying collective efficacy as a mediator in this relationship.

It is important to consider then what specifically it is about the school climate that impacts efficacy beliefs, in particular, instructional strategies efficacy given that this predicted reported inclusive behaviours. Examining the relationships between instructional strategies efficacy and school climate perceptions indicated that academic emphasis predicted this sub-type of efficacy. As discussed in Chapter 6, this relates to beliefs that the school expects high achievement (Hoy et al., 1991; Pas et al., 2012). The findings of the current research therefore suggest that teachers who believe their school pushes for outstanding academic performance (i.e. measured by beliefs about the school's push for achievement) were more likely to be confident in using effective instructional strategies for children with ID. This is in line with previous research examining teachers' general efficacy (e.g., Hoy & Woolfolk, 1993; Pas et al., 2012), but this a novel finding with regards to teacher efficacy towards children with ID in particular.

It is common for inclusive education research to focus on understanding the beliefs that teachers hold about themselves. For example, teachers' own attitudes, self-efficacy, attributions or prejudice. Fewer studies take into account the impact of school environment perceptions. The current thesis argues that examining school ethos is important in understanding not only how teachers feel about the nature of their working environment but may also provide an explanation as to why teachers hold the beliefs they do. Thus there is a need for theory and research to acknowledge the importance of external factors such as collective efficacy on teachers' beliefs. As discussed in Chapter 6, collective efficacy is understudied (Klassen et al., 2011). The findings of the current thesis urge further investigation of collective efficacy to understand how perceptions of others impact the individual.

These findings suggest that schools must become aware that the circumstances in which teaching occurs are key to teachers' perceptions of their ability. To do this, head teachers should examine their own school climate and consider how best to promote a positive school ethos around inclusive teaching practices in their schools. This in turn may enhance teachers' self-efficacy beliefs. Interventions can influence school climate perceptions (Parisi et al., 2015) suggesting that such a recommendation has value. While most practitioners would recognise the importance of a positive school climate, the ways in which this impacts on teachers' perceptions of their own efficacy have been less extensively investigated.

Mastery experience. As discussed in Chapter 5, Study 1 found that teachers' years' experience predicted self-efficacy levels. Teachers with more years of teaching experience reported higher levels of self-efficacy. This suggests that over

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their career, teachers' efficacy will increase. Despite this, previous findings on the relationship between years' of experience and teachers' self-efficacy beliefs has been mixed (Bandura, 1997; Dembo & Gibson, 1985; Klassen & Chui, 2010; Tschannen-Moran, Woolfolk Hoy & Burke Spero, 2005; Woolfolk Hoy, & Hoy, 1998). Study 2 therefore aimed to further investigate this by measuring mastery experience. Mastery experience has been found to be the most potent source of self-efficacy beliefs (Bandura, 1997; Tschannen et al., 1998; Tschannen-Moran & McMaster, 2009). As such, teachers' perceptions of mastery when working with a child with ID may inform future teaching practices.

The current research found that mastery experience was a predictor of teachers' self-efficacy. Such a finding indicated that teachers looked to their past performance in order to determine how confident they felt about working with children with ID. In doing so, the individual is provided with authentic evidence of his or her ability so much so that perceptions of successful past performance enhance efficacy. Although others have examined this (Brownell & Pajares, 1999; O'Toole & Burke, 2013; Roll-Pettersson, 2008; Wiesel & Dror, 2006), problems with measures employed have limited the strength of conclusions drawn. This thesis therefore extended previous research by using more reliable measures of teacher efficacy.

The importance of mastery experience has implications for inclusion research. Several studies have argued that teachers' years' of experience is an important variable influencing teachers' beliefs (e.g., Avramidis et al., 2000; Avramidis & Norwich, 2002; Glaubman & Lifshitz, 2001; Parasuram, 2006 Soodak, et al, 1998; Varcoe & Boyle, 2014). The current thesis argues that in examining teaching experience, it is important to assess the nature and quality of these

experiences and whether teachers perceive their past performance to be successful. Where research has found no effect of years' experience on teachers' beliefs towards inclusion, it may be the case that mastery experience would have influenced the results. This should be taken into account in the design of future studies interested in the role of teaching experience.

Interventions to increase mastery experience may be beneficial to self-efficacy. Again, this may involve the use of teacher self-reflection. Encouraging reflection on performance of working with children with ID may enable teachers to identify mastery. This also highlights the importance of support when performance is not perceived to be successful. This may be for example, through job shadowing or collaboration with teachers who are confident in working with children with ID. Head teachers should therefore be aware of teachers' reflection on their performance and be able to offer support to those who need this.

The importance of mastery experience also has implications for initial teacher education. Student teachers should be given the opportunity to master inclusive teaching strategies before they are expected to implement these in the classroom. As discussed in Chapter 6, this may be achieved using computer-based simulations which provide a hands-on approach to addressing the specific learning objective (Bray-Clark & Bates, 2003; Christensen et al., 2011). It may also be beneficial to incorporate a student placement in a special education school as part of teacher training. This would provide students with an opportunity to teach a child with ID with the support of the special education teachers. In doing so, students may be given a sense of mastery experience which in turn, enhances efficacy beliefs to teach a child with ID their own classroom when qualified.

8.3.3 Teachers are not guided by automatic beliefs about children with ID.

Given that teachers' intentions did not predict their reported behaviour, this suggested that teachers may not engage in a reasoned action thought process as suggested by TPB when responding to students with ID. Teachers may therefore use a more automatic thought process to inform their behaviour. Based on the MODE model's distinction of the two types of cognitive processing (deliberative, effortful processing versus spontaneous, automatic processing), this then identified the need to examine teachers' implicit (i.e. automatic) beliefs in addition to beliefs elicited by more effortful, deliberative thinking.

Using a version of the ST-IAT, the thesis showed that teachers' implicit attitude towards children with ID did not relate to the reported use of inclusive teaching strategies. Such a finding suggests that teachers therefore do not act on the basis of automatic beliefs regardless of whether these are positive or negative. This is an encouraging finding as teachers are not acting in a biased manner towards children with ID. Previous research has examined the nature of teachers' implicit beliefs (Hornstra et al., 2010; Kelly & Barnes-Holmes, 2013; Markova et al., 2015; Scanlon & Barnes-Holmes, 2013). This thesis provided the first attempt to use IAT procedures to examine the relationship between teachers' automatic beliefs and reported inclusive behaviours for children with ID.

Stronger relationships between implicit attitudes and reported behaviour were identified in teachers who scored low in classroom management efficacy. Thus teachers who perceived themselves as unable to maintain an effective classroom

environment are more likely to be influenced by their automatic beliefs to influence their reported inclusive behaviours. This raises the question as to which teachers are more vulnerable to holding negative implicit attitudes towards children with ID. As discussed in Chapter 5, the findings from Study 1 found that teachers low on conscientiousness may place responsibility on environmental factors rather than on themselves when forming their intention to act inclusively. Thus teachers low on conscientiousness may be more likely to look to the environment and believe they do not have control of this, that is to say they may have low classroom management efficacy. As a result, they may then act upon automatic beliefs.

Study 3 findings suggest that teachers do not engage in spontaneous processing when considering whether to work with children with ID. This then indicates that teachers use a more effortful decision making approach when dealing with such individuals. According to the MODE model, deliberative processing involves evaluating the positive and negative consequences of the behaviour (Fazio & Roskos-Ewoldsen, 2005). This is the process underlying TPB in that the individual's attitude determines the behavioural intention and it is this that then predicts the behaviour. Despite this, all three studies within the thesis supported the usefulness of self-efficacy in predicting teachers' reported inclusive behaviours rather than intentions. The MODE model's account of variables other than attitudes (i.e. self-efficacy) and whether these rely on deliberative or spontaneous processing is unclear. The current research findings suggest that variables other than attitudes (i.e. self-efficacy) are involved in the deliberate type of thought process.

The finding that teachers do not act on their implicit beliefs suggests that with training, teachers can be educated as to how to use their thinking to enhance

their perceived ability to work with learners with ID. The importance of classroom management efficacy suggests the need to support teachers in becoming more confident in their ability to manage a class which includes a child with ID. Head teachers may be aware of the need to do this however, the current research highlights the potential benefits. If teachers feel more in control of the classroom, they may take more time to consider how to make appropriate adaptations for the child rather than allowing automatic beliefs to guide behaviour given that those low on this efficacy variable were more likely to act on their implicit beliefs.

8.4 Limitations and Future Directions of the Current Research

The studies have a number of methodological limitations which should be taken into account. The first possible limitation is the use of self-report measures to examine teachers' inclusive behaviours. Common method variance and socially desirable responding are well documented arguments against the use of self-report behaviour measures (Campbell & Fiske, 1959; Van de Mortel, 2008). However, procedural remedies proposed by Podsakoff et al. (2003) were used in the present study to reduce common method variance (see Chapter 5 Section 5.2.2). Also, confidentiality was assured in order to help combat social desirability. Participants utilized the full range of the self-report scales (i.e. some participants did indeed report that they frequently employed inclusive teaching practices however, others reported they rarely or never did this). Furthermore, strong relationships between teachers' self-reported and observed behaviour in the classroom have been found elsewhere (Clunies-Ross et al., 2008; Desimone, 2009; Stanec, 2009), increasing confidence in the validity of the results.

It is important to consider the self-report measure of non-verbal behaviour in Study 3. Although some evidence suggests this is an appropriate way to assess non-verbal communication (Richmond et al., 2003; She & Fisher, 2002), using self-report is a relatively new approach. As discussed in Chapter 7, the measure of non-verbal behaviour (The Teacher Communication Behavior Questionnaire; She & Fisher, 2000, 2002) may be limited. The scale raises the question as to whether participants would be aware if they do engage in such behaviour thus hindering their ability to self-report this. Future research is needed to implement observations of non-verbal behaviours alongside a self-report tool. Not only would this allow for further investigation of the relationship between implicit attitudes and non-verbal behaviour but would also allow for an examination of the reliability of non-verbal self-report measures.

This thesis has established which beliefs are likely to impact whether teachers perceive themselves as making adaptations. However, it is important to recognise that the nature and extent of these adaptations now calls for closer attention. Future research may address this by using a multi-method approach to measuring actual practice (e.g., teacher logs, observation). Although this would introduce different limitations, the use of multi-methods may provide a more reliable result than any can do singly.

The correlational nature of Study 2 means that it cannot be determined whether school climate predicted self-efficacy or vice versa. Bandura (1977, 1996) argued that human behaviour is the product of a continuous reciprocal interaction between cognitive, behavioural, and environmental influences. It may be then that school climate influences efficacy beliefs but as efficacy beliefs increase,

perceptions of the school climate also are enhanced. Our findings provide additional evidence that social cognitive and environmental (school ethos) variables need to be incorporated in explanations of variation in teachers' self-efficacy for working with students with ID.

Another methodological consideration relates to how participants understood the term ID. The study did not ask participants to report exactly which child they were considering when completing the questionnaire. The researcher intended only teachers who worked with children with ID to participate in each study. It may be the case, however, that some participants were thinking about children with other disabilities or developmental disorders. It should be noted though that each participant was given instructions which described ID and thus helped identify a child they should consider (see Chapter 4). Teachers therefore should have answered each questionnaire in relation to a child they perceived to experience such difficulties and struggled with mainstream education. The thesis was therefore successful in identifying which beliefs were related to children who struggle to learn and how these impacted the use of classroom adaptations for these learners.

One final possible limitation which should be acknowledged is that within each study, only Scottish primary teachers were recruited. Scotland has developed the Curriculum of Excellence which is a unique education system used only in this country. As a result, there may be differences in not only Scottish teaching but also in the beliefs teachers hold. At an international level, Sharma, Forlin, Loreman and Earle (2006) found significant differences in the views held by pre-service teachers in Western and Eastern countries. This suggests a need to replicate the studies across cultures to determine whether beliefs identified as important in the current research

are also important internationally. It is important to note though, that as discussed in Chapter 2, many countries have similar policies and legalisation regarding the inclusion of children with ID in mainstream schools. This suggests that the current findings are relevant and of interest to the wider teaching population.

Given the importance of teachers' self-efficacy across all studies, there is a need for future research to understand the role of self-efficacy in teachers' behaviour change within schools. Evidence suggests that asking participants to visualise themselves successfully carrying out a task can enhance later performance (Bandura 1986; Feltz, & Landers, 1983; Morin, & Latham, 2000). This has not been examined within a school context, nor how it applies to teacher behaviours If such an intervention was successful, this may provide a mechanism by which self-efficacy can used to increase behaviour.

Future research on inclusion should also examine the effect of teachers' self-efficacy on children with ID, both in terms of their achievement and their social behaviour and development within the school. Research has suggested that teachers' self-efficacy has a positive impact on students' motivation and achievement (Caprara, Barbaranelli, Steca, & Malone, 2006; Mojavezi, & Tamiz, 2012). Less research, however, has examined this in relation to children with ID. Identifying a relationship between these may bring us closer to understanding how inclusion can be made consistently successful across primary schools.

The role of individual differences in teachers' perceptions of mastery experience is another area for future research. Changes in efficacy which result from mastery experience are not related to performance as such but instead, are based on

cognitive processing of the information provided by that performance (Bandura, 1997). The extent to which mastery experience impacts efficacy beliefs is therefore dependent on number of factors such as self-schemata and attributions. For example, success that is attributed to internal, controllable causes such as ability will enhance teacher efficacy whereas success that is attributed to factors such as help from others or luck will not strengthen efficacy beliefs (Bandura, 1993; Pintrich & Schunk, 1996). Further, self-schemata influence how individuals remember and interpret their performance. This suggests a role of individual differences in that the same performance may be perceived differently by different individuals. This would ultimately impact the associated efficacy beliefs.

A final area for future research relates to Karpinski and Hilton's (2001) argument that implicit attitudes may simply reflect the environment the individual has been exposed to. For example, when a person demonstrates favourable evaluations of disabled people, this may mean that the individual has simply been exposed to many positive-disabled associations. This suggests a role of the school climate. Study 2 highlighted the importance of school culture factors in teachers' explicit beliefs, however, there may be a need for future research to examine the role of teachers' perceptions of the school climate on their automatic beliefs towards inclusion.

8.5 Conclusion

Although policy mandates inclusion in schools, it is classroom teachers who determine its success. The main aim of this thesis was therefore to examine primary teachers' beliefs towards working with children with ID and to understand how these beliefs related to their reported inclusive behaviours. Study 1 was the first study to

investigate this issue using a prospective design to rigorously test TPB. In addition, Study 1 acknowledged the role of teacher personality in reported inclusive behaviour. Findings highlighted self-efficacy as the most important predictor of teachers' reported inclusive behaviours. Drawing on SCT and the findings from Study 1, Study 2 examined what factors predicted teachers' self-efficacy. This investigation indicated the importance of teachers' school ethos (collective efficacy and perceptions of the school climate) and mastery experience in their self-efficacy beliefs.

Given that the results from Study 1 and 2 suggested automatic beliefs may impact teachers' reported behaviours, Study 3 used the MODE model to examine implicit beliefs towards children with ID. Results showed that teachers' implicit attitude towards children with ID did not relate to any explicit beliefs or reported inclusive behaviour. However, stronger relationships between implicit attitudes and reported behaviour were identified in teachers who scored low in classroom management efficacy. Together these findings suggest the importance of teacher efficacy beliefs in use of inclusive strategies and bring us closer to understanding how these beliefs are fostered. School climate impacts on teachers' self-perceptions and these in turn impact on inclusive practices. Implementing inclusivity is therefore a social cognitive process.

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Appendices

Appendix 1: Article accepted for publication in British Journal of Educational Psychology

The impact of social cognitive and personality factors on teachers' reported inclusive behaviour.

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Background. Inclusive education of children with intellectual disabilities is intended to maximise their educational experience within the mainstream school setting. While policy mandates inclusion, it is classroom teachers' behaviours that determine its success.

Aims. This study provided a novel application of the Theory of Planned Behaviour (TPB) in this setting. It examined the effect of TPB variables and personality on reported inclusive teaching behaviours for learners with intellectual disabilities.

Sample. The sample comprised 145 primary school teachers (85% female) from mainstream schools across Scotland.

Method. Participants completed a TPB questionnaire assessing attitudes (instrumental and affective), subjective norms (injunctive and descriptive norms), perceptions of control (self-efficacy and controllability) and behavioural intentions towards using inclusive strategies. The Big Five Personality Index, measuring extraversion, conscientiousness, openness, neuroticism, and agreeableness, was also completed. Teaching practices were reported two weeks later.

Results. Instrumental attitudes, descriptive norm, self-efficacy and neuroticism predicted teachers' intentions to use inclusive strategies. Further, conscientiousness had indirect effects on intentions through TPB variables. These intentions, however, did not predict reported behaviour expected by TPB. Instead, self-efficacy was the only significant predictor of reported behaviour.

Conclusions. This study demonstrates the application of TPB to an educational setting and contributes to the understanding of teachers' reported use of inclusive strategies for children with intellectual disabilities.

As schools become more inclusive, teachers must adjust behaviours to better accommodate children of all abilities. Curricular, resource and instructional adaptations are required to make a difference to students and their learning (Avramidis & Norwich, 2002; De Boer, Pijl, & Minnaert, 2011). Curricular adaptations are defined as modifications to the educational components in a curriculum which can increase the learner's performance or enable participation (King-Sears, 2001; Rose, Meyer, & Hitchcock, 2005). This includes modifying the learning outcomes or marking criteria. Resource adaptations relate to altering the material or resources used (Comfort, 1990; Reisberg, 1990; Soukup, Wehmeyer, Bashinski, & Bovaird, 2007). Instructional adaptations refer to altering *how* the content is taught (Janney & Snell, 2004). This can involve altering the pace of learning and modifying the ways in which instructions are delivered (Deschenes, Ebeling, & Sprague, 1994; Kurth, Lyon, & Shogren, 2015). Curricular, resource and instructional adaptations therefore change the complexity, format and amount of information taught.

Teachers recognise what is required to make these adaptations and commonly acknowledge the importance of modifying the curriculum, adjusting regular resources and changing instruction (Kurth & Keegan, 2012; Graham et al., 2008; McLeskey & Waldron, 2002; Schumm & Vaughn, 1991). Despite this awareness, evidence of teachers' implementation of these adjustments has, however, been mixed (Destefano, Shriner, & Lloyd, 2001; Kurth & Keegan, 2012; Roy, Guay, & Valois,

2013). Given that successful inclusion requires teachers to make adaptations such as modifying curricular content and altering how content is taught, it is important to understand what influences the decision to act inclusively. Examining the relationships between teacher beliefs and subsequent inclusive behaviour will provide insight into the socio-cognitive processes involved in the decision to act inclusively and will have practical implications for intervention. This requires a theoretical framework which explains the relationship between beliefs and behaviour.

Theory of Planned Behaviour

One of the most influential theories in investigations of the relationship between cognitions and behaviour is the Theory of Planned Behaviour (TPB; Ajzen, 1991). The original theory argues that attitudes towards a behaviour (an individual's evaluation of the behaviour), subjective norms (perception of social pressures bearing on the performance of the behaviour) and perceived behavioural control (PBC; factors likely to facilitate or inhibit the behaviour) combine to predict behavioural intention (willingness to perform the behaviour), which is, in turn, related to the enactment of that behaviour. Behavioural intention therefore mediates the relationship between attitudes, subjective norms, PBC and behaviour (see Figure 1). TPB also holds that when PBC is high, this can have a direct effect on behaviour without the mediating effect of behavioural intentions.

[Figure 1 about here]

To increase the theory's predictive strength, researchers have reconceptualised the model to propose what is known as the two-component theory (Ajzen, 2002a; Elliott

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& Ainsworth, 2012; Rhodes & Courneya, 2003; Rhodes, Blanchard, & Matheson, 2006). In this version, there is now a distinction between instrumental and affective attitudes. Instrumental attitudes relate to the perceived consequences involved in performing the behaviour. In contrast, affective attitudes concern the emotions provoked when performing the behaviour (Fishbein & Ajzen, 2010). The original TPB tested instrumental attitudes only, but affective attitudes have subsequently been found to be strong predictors of intention across a range of behaviours (Kraft, Rise, Sutton, & Røysamb, 2005; Rise, Kovac, Kraft, & Moan, 2008).

Two components of perceived social pressure have also been distinguished: injunctive and descriptive norms. Injunctive norm relates to perceptions that significant others approve of the behaviour. This is synonymous with the traditional subjective norm construct in the original TPB (renamed 'injunctive norm' as it relates to a social norm concerning the individual's behaviour). On the other hand, descriptive norm involves the belief that others are performing the behaviour (Fishbein & Ajzen, 2010). Meta-analytic findings suggest that descriptive norm is an important predictor of intention, supporting the inclusion of this in the theory (Rivis & Sheeran, 2003).

Finally, a distinction is made between two dimensions of PBC: self-efficacy and controllability (Ajzen, 2002b). Controllability, which is identical to PBC in the original TPB, refers to the degree to which the individual believes she or he has control over performing the behaviour (Fishbein & Ajzen, 2010). This decision is reached by considering external factors, such as resources or opportunities, which may enhance or inhibit performance of the behaviour. In contrast, self-efficacy concerns beliefs regarding how capable the individual feels s/he is of performing the

behaviour (Bandura, 1986, 1994, 1997). Although these are both sub-components of

PBC, self-efficacy has been found to be a stronger predictor of intentions than

controllability (Trafimow, Sheeran, Conner, & Finlay, 2002). Previous research has

found self-efficacy to have a strong relationship with inclusive intentions (Brady &

Woolfson, 2008; Sharma, Loreman, & Forlin, 2012; Woolfson & Brady, 2009).

Although these studies did not implement TPB, this suggests self-efficacy is an

important variable. Figure 2 shows the reconceptualised two-component TPB.

[Figure 2 about here]

Application of TPB to education. Variables similar to those incorporated in TPB

have been identified as important in teachers (Avramidis, Bayliss, & Burden, 2000;

Avramidis & Norwich, 2002; De Boer, et al, 2011; Strogilos & Stefanidis, 2015).

These studies, however, did not implement the TPB framework to examine

influences on classroom practices. Where studies have utilised TPB to predict self-

report inclusive behaviours, they have used the original theory rather than the two-

component model. For example, in a test of the original theory, MacFarlane and

Woolfson (2013) found attitudes and PBC positively predicted behavioural intentions

to work with children with behavioural difficulties but subjective norm did not.

Instead, subjective norm predicted teachers' self-report inclusive behaviours.

Some investigators have reported similar equivocal subjective norm results

(Alhassan, 2012; Batsiou, Bebetsos, Panteli, & Antoniou, 2008), while others have

found the expected relationship between this component and teachers' inclusive

intentions (Ahmmed, Sharma, & Deppeler, 2013; Yan & Sin, 2013). The role of

subjective norm in education is, therefore, unclear and poses a challenge to the

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application of TPB to teachers' inclusive behaviours. This component has, however, sometimes been found problematic in the prediction of health behaviours (Armitage & Conner, 2001; Hagger, Chatzisarantis, & Biddle, 2002). An investigation which assesses both injunctive and descriptive norms will shed light on how teachers' perceptions of others influence their classroom behaviour.

A limitation of previous studies is that TPB components were not measured as recommended by Ajzen (2002). Thus, the relationships between TPB components cannot directly be compared because of the 'principle of compatibility' rule (Ajzen, 2000). This states that the behaviour should be defined in terms of the action performed, the target at which the action is directed, the context and the time at which it will be performed. These can be defined at any level of generality or specificity but TPB components are only comparable when measured at the same level. A further limitation relates to the measurement of behaviour. Previous work has either not included a measure of behaviour (e.g., Batsiou et al., 2008, focused on intentions only) or has measured behaviour simultaneously with other components (e.g., Jeong & Block, 2011). This prevents a test of one of the key purposes of TPB, namely to predict future behaviour. This is best addressed in a prospective study. One of the main aims of this research is therefore to use TPB to predict the extent to which teachers employ inclusive teaching practices.

Personality and TPB

The study aimed also to examine the mediating and moderating effects of personality in the TPB component relationships. There are compelling arguments that personality and cognitive (TPB components) influences on behaviour should be

combined within one theoretical paradigm (Conner & Abraham, 2001). Personality traits are individual differences in the consistency of thought and action (McCrae & Costa, 1990). The dominant view is that there are five broad personality dimensions: neuroticism, extraversion, openness, agreeableness and conscientiousness (Digman, 1990; John, & Naumann, 2010; McCrae & Costa, 1990, 2013).

Research within health and social settings has demonstrated the mediating effects of TPB components in the relationship between personality and behaviour. For example, individuals high in conscientiousness are organised and strive for achievement. This is likely to entail formulating plans and committing to perform relevant behaviours. Thus, conscientiousness may have an indirect effect on behaviours, mediated by individual differences in TPB variables (i.e. intentions). Evidence consistent with this has been obtained in studies of health-related behaviour (Conner & Abraham, 2001; de Bruijn, Brug, & Van Lenthe, 2009; McEachan, Sutton, & Myers, 2010). A moderating role of conscientiousness in the intention-behaviour relationship has also been reported (Conner, Rodgers, & Murray, 2007; Rhodes, Courneya, & Hayduk, 2002). Given that individuals high in conscientiousness are organised and strive for achievement, the salience of inclusive beliefs may be stronger. Indeed, accessibility has been found to influence the relationship between beliefs and behaviour (Fazio, Chen, McDonel, & Sherman, 1982). Thus, the correspondence between beliefs and behaviour is likely to be stronger in those high on conscientiousness as a result of inclusive beliefs being more accessible.

Extraversion has also been found to moderate the intentions and behaviour relationship (Hoyt, Rhodes, Hausenblas, & Giacobbi, 2009). Individuals high on this

trait are more likely to have high levels of enthusiasm. This may lead to a higher intention to perform the behaviour. However, it may also be the case that this enthusiasm lasts for brief spells only resulting in a lack of focus. This may weaken the relationship between intentions and behaviour. The moderating role of extraversion therefore merits further examination. Finally, neuroticism has been found to moderate the subjective norm and intention relationship (Rhodes et al., 2002). It was argued that those high on neuroticism are more likely to perform a behaviour where they perceive there to be much social pressure to do so. Again, these findings suggest that personality influences the strength of beliefs which ultimately influences the behaviour.

Fewer studies have attempted to assess the role of openness and agreeableness. Openness relates to readiness to take on new ideas and agreeableness concerns tendencies to be considerate of others (McCrae & Costa, 1990). These traits are also likely to be important in the development of inclusive beliefs and thus translate into behaviour. The effect of all of the big five personality traits on teachers' inclusive beliefs and reported behaviour therefore merit examination. Teacher personality may be important to performance of inclusive behaviours given that it impacts the way teachers think, organize their classroom and respond to students (Klassen & Tze, 2014; Mohanna, Chambers, & Wall, 2007; Polk, 2006; Rushton, Morgan, & Richard, 2007). Despite this, little research has attempted to examine the role of teacher personality in the implementation of inclusive teaching practices.

The Current Study

The current study utilized the two-component TPB to examine mainstream teacher cognitions and reported behaviour towards including children with intellectual disabilities (ID). In the light of arguments for the integration of TPB and personality factors, we also examined the influence of the latter on inclusive beliefs and reported behaviour. We focused specifically on inclusion of children with ID because of the need to make curricular, resource and instructional adaptations. To carry out such an investigation, we assessed initially teachers' scores on TPB variables and personality (using the Big Five Inventory). The TPB variables were: attitudes (affective and instrumental), subjective norms (injunctive and descriptive), PBC (self-efficacy and controllability) and intentions to use inclusive teaching behaviours. Two weeks later, we collected participants' reports on their uses of inclusive behaviours in their teaching. Specifically, the aims of the study were:

1. To test the applicability of TPB in an education setting in order to inform inclusive classroom behaviours in mainstream schools. To the best of the authors' knowledge, no study has used a prospective design and adopted the two-component model to examine teacher beliefs and reported inclusive behaviour.

2. To examine the impact of teachers' personality on inclusive beliefs and reported behaviour.

We expected attitudes (instrumental and affective), subjective norms (injunctive and descriptive norms) and perceptions of control (self-efficacy and controllability) would predict teachers' intentions to use inclusive behaviours. Intentions, self-efficacy and controllability would account for a significant proportion of the variance in reported inclusive behaviour. We expected that conscientiousness would have

mediational effects on TPB components in the relationships between personality and intention. Further, those scoring high on conscientiousness would have stronger intention and behaviour relationships Extraversion may also act as a moderator in the relationship between intentions and behaviour. Finally, high neuroticism scores would relate to a strong relationship between subjective norms (injunctive and descriptive norms) and intentions.

Method

Design

The study was prospective in design. At Time 1, self-report questionnaires measured demographics, personality variables and TPB variables: attitudes (affective and instrumental), subjective norms (injunctive and descriptive), PBC (self-efficacy and controllability) and intentions with respect to three inclusive behaviours (see below). At Time 2, two weeks later, questionnaires assessed reported inclusive behaviours during this time period.

Sample

At Time 1, data were collected from 145 classroom primary teachers (85% female) from 31 schools across Scotland. Ages ranged from 22 to 62 years (M=37.74, S.D=11.71). Mean length of teaching experience was 13.78 years (SD=10.09). Eighty-one (56%) of the participants responding at Time 1 subsequently completed Time 2 questionnaires. Multivariate analysis of variance showed no significant differences with respect to variables measured at Time 1 between participants who responded at Time 2 and non-responders, V=.04, $F(10, 129)$=.56, p=.844.

Measures

TPB measure. Commonly used items were taken from manuals on constructing TPB questionnaires (Ajzen, 2002a; Fishbein & Ajzen, 2010; Francis et al., 2004). This allowed us to conform to the principle of compatibility and to use items similar to those used in health and social settings. TPB components were measured with respect to three behaviours identified from the literature as important to the inclusion of children with ID: Modifying curricular content; Adapting regular resources; and Adapting pace of instruction. These behaviours were selected as they reflected curricular, resource and instructional adaptations teachers' must make in order to meet the needs of the child (Graham et al., 2008; Kurth & Keegan, 2012; Roy et al., 2013; Scott, Vitale, & Maten, 1998; Swanson, 2001; Yuen, Westwood, & Wong, 2005). All items described below were asked in relation to each set of behaviours. Scores were then averaged across the sets of behaviours to produce a single score for that component. This approach is recommended by Fishbein and Ajzen (2010). Rather than assessing a single behaviour, it is possible to assess a behavioural category using a representative set of actions. Principal component analysis supported the uni-dimensionality of the scales.

Attitudes. An example statement which preceded the attitude adjectives was: 'For me, modifying curricular content when working with students with intellectual difficulties over the next two weeks is …'. Items were measured on 9-point bipolar scales. Six anchors were used to measure instrumental attitude: (1=*negative*; 9=*positive*: 1=*unimportant*; 9=*important*: 1=*unnecessary*; 9=*necessary*: 1=*not at all rewarding*; 9=*rewarding*: 1=*a terrible idea*; 9=*a great idea*: 1=*detrimental*; 9=*beneficial*). Six anchors assessed affective attitude: (1=*aggravating*; 9=*satisfying*:

1=*unpleasant*; 9=*pleasant*: 1=*unenjoyable*; 9=*enjoyable*: 1=*boring*; 9=*interesting*: 1=*stressful*; 9=*relaxing*: 1=*undesirable*; 9=*desirable*). Scores were averaged across the three sets of behaviours to create a mean instrumental attitude score (α=.94) and a mean affective attitude score (α=.93).

Subjective norms. Two items measured injunctive norms: 'Most people who are important to me would want me to modify curricular content when working with students with intellectual difficulties over the next two weeks'; 'The people in my life whose opinions I value would want me to modify curricular content when working with students with intellectual difficulties over the next two weeks'. Participants responded to statements on a 9-point Likert scale (1=*strongly disagree, 9=strongly agree).* Descriptive norm items were: 'Many teachers modify curricular content when working with students with intellectual difficulties.' (1=*strongly disagree, 9=strongly agree)*; 'Of the teachers you know, how many do you think will modify curricular content when working with students with intellectual difficulties?' (1=*none of them, 9=all of them)*; 'How often do you think that other teachers modify curricular content when working with students with intellectual difficulties?' (1=*never, 9=all the time)*. Scores were averaged across the three sets of behaviours to create mean injunctive (α=.93) and mean descriptive norm (α=.89) scores.

Perceptions of behavioural control. Teachers' inclusive self-efficacy items were: 'How confident are you that you will be able to modify curricular content when working with students with intellectual difficulties over the next two weeks?' (1=*not confident*; 9=*extremely confident*)'; 'I have the ability to modify curricular content when working with students with intellectual difficulties over the next two weeks' (1=*strongly disagree*; 9=*strongly agree*); 'To what extent do you see yourself as

being capable of modifying curricular content when working with students with intellectual difficulties over the next two weeks?' (1=*very incapable*; 9=*very capable*). Two items assessed teachers' inclusive controllability. These were: 'It is completely up to me whether or not I modify curricular content when working with students with intellectual difficulties over the next two weeks' (1=*strongly disagree*; 9=*strongly agree*) and 'How much personal control do you feel you have over modifying curricular content when working with students with intellectual difficulties over the next two weeks' (1=*no control at all*; 9=*complete control*). Scores were averaged across the three sets of behaviours to create mean self-efficacy (α=.89) and controllability (α=.66) scores.

Intention. Three items assessed behavioural intention. These were: 'I intend to modify curricular content when working with students with intellectual difficulties over the next two weeks?' (1=*strongly disagree*; 9=*strongly agree*); 'How likely is it that you will modify curricular content when working with students with intellectual difficulties over the two weeks?' (1=*extremely unlikely*; 9=*extremely likely*); 'I will try to modify curricular content when working with students with intellectual difficulties over the next two weeks.' (1=*not at all*; 9=*very often*). Scores were averaged across the three sets of behaviours to create a mean intention score (α=.90).

Behaviour. Four items measured each set of inclusive behaviours (modifying curricular content, adapting regular resources and adapting pace of instruction). Example items were: 'I have modified curricular content when working with students with intellectual difficulties over the past two weeks' (1=*strongly disagree*; 9=*strongly agree*); 'How many days did you modify curricular content when working with students with intellectual difficulties over the last two weeks?' (1=*no*

days; 9=*every day*). All items were also asked in relation to adapting regular resources and adapting pace of instruction. Scores were averaged across the three sets of behaviours to obtain an overall mean 'reported inclusive behaviours' score (α=.95).

The issue of common method variance was addressed using procedural remedies proposed by Podsakoff, MacKenzie, Lee and Podsakoff (2003). This involved assuring participants of anonymity, counterbalancing question order and psychologically separating the measurement of variables. This was achieved by telling participants that the research was interested in experiences of working with children with ID rather than measuring beliefs in relation to their reported behaviour.

Pilot study. The TPB measure was piloted using the 'think aloud' protocol (Darker & French, 2009; French, Cooke, McLean, Williams, & Sutton, 2007). Participants were asked to report their thoughts as they completed the questionnaire. A convenience sample of six female primary teachers participated. Age ranged from 23-60 years (M=46 years SD=7.58). Teaching experience ranged from 1 year to 35 years (M=17 years SD=13.16). The findings established content and face validity of the measure. For example, the think aloud protocol indicated that teachers found the items clear with respect to what was meant by modifying curricular content, adapting regular resources and adapting pace of instruction. Each participant provided examples of how she adapted the curriculum, used different resources and changed instruction within her classroom. Examples included using different textbooks, worksheets and homework. Teachers also reported making instructions slower, clearer and simpler. This indicated that teachers understood what was meant by the term 'adaptation' and is in line with perceptions reported elsewhere (Kurth &

Keegan, 2012; Graham et al., 2008; McLeskey & Waldron, 2002; Schumm & Vaughn, 1991).

Personality. The Big Five Inventory (Benet-Martinez & John, 1998) measured personality. This 44-item measure assesses the core attributes of the Big Five personality traits. Conscientiousness scores were calculated using items such as 'I am someone who is a reliable worker' (α=.83). Extraversion was measured using items such as 'I am someone who is full of energy' (α=.86). Neuroticism was assessed using items such as 'I am someone who worries a lot' (α=.80). An example openness item was 'I see myself as someone who has an active imagination' (α=.69). Finally, an example agreeableness item was 'I am someone who is considerate and kind to almost everyone' (α=.72). Participants responded on a 5-point Likert scale (1=*strongly disagree*; 5=*strongly agree*).

Demographic information. Teachers provided information on gender, years of experience teaching and if they had completed any inclusive education training.

Procedure

After ethical approval was obtained, questionnaire packs were distributed to 31 schools. At Time 1, each pack contained an information sheet, a consent form and the questionnaire. Two-weeks later, the appropriate number of Time 2 questionnaires was distributed to each school. A further two weeks later, schools were contacted regarding collection. Schools were given a £20 voucher as a thank you for their participation.

Data Analyses

Multiple regression analysis was conducted to examine predictors of teachers' intentions. Mediational analyses were then carried out to determine whether TPB variables mediated relationships between personality-intentions. Next, we used multiple regression analysis to identify predictors of teachers' inclusive classroom behaviours. Finally, we examined the moderating effects of personality on the relationships between TPB variables.

Results

Descriptive Statistics

Table 1 shows means, standard deviations, and bivariate correlation coefficients for the scales used in the study. Means indicate positive instrumental attitudes, injunctive norm, descriptive norm, self-efficacy, controllability, intentions and behaviour. Affective attitude generated the lowest mean score. Instrumental and affective attitudes, injunctive norm, descriptive norm and self-efficacy were significantly correlated with intention. Instrumental and affective attitudes, injunctive norm, descriptive norm, self-efficacy and intention were significantly correlated with behaviour. Correlations also showed that teachers who scored higher on conscientiousness reported more positive affective attitudes, self-efficacy and intentions. There was no correlation between TPB components and extraversion or neuroticism. However, there was a significant relationship between agreeableness and descriptive norm. Further, those higher in openness reported higher self-efficacy towards including children with ID.

[Table 1 about here]

Predicting Teacher Intentions

To identify predictors of teachers' inclusive intentions, hierarchical multiple regression was used. Demographic variables (gender, training, years' experience) were entered at Step 1. Personality variables (extraversion, neuroticism, openness, conscientiousness, and agreeableness) were included at Step 2. Instrumental attitudes, affective attitudes, injunctive norm, descriptive norm, self-efficacy and controllability were added at Step 3.

Results showed that the model accounted for a small but statistically significant proportion of the variance (R^2=.08, p=.012) at Step 1. Gender (β= -.18 p=.032) was a significant predictor of intention. When personality traits (conscientiousness, extraversion, neuroticism, openness and agreeableness) were added, this resulted in a significant increase to R^2 (R^2=.18, R^2_{change}=.10, p=.019). At this Step, gender (β= -.17, p=.05), training (β=.20, p=.022), conscientiousness (β=.22, p=.023), extraversion (β=.19, p=.042) and neuroticism (β=.24, p=.010) were significant predictors of intentions. The inclusion of TPB variables significantly increased R^2 (R^2=.67, R^2_{change}=.49, p<.001). Instrumental attitude (β=.28, p=.001), descriptive norms (β=.17 p=.010) and self-efficacy (β=.50 p<.001) were independent predictors of intention. Neuroticism was the only personality trait (β=.17, p=.008) to significantly predict intentions at this Step. This suggested that the effect of conscientiousness and extraversion on intentions may be mediated by TPB variables. None of the demographic variables were significant after the inclusion of TPB components. See Table 2.

[Table 2 about here]

Indirect effect of personality. Hayes' (2013) PROCESS macro was used to examine the mediational effects of TPB components in the relationships between personality and intention. Conscientiousness had an indirect effect on intentions through self-efficacy (β=.16, BCa CI [.005, .15], κ^2=.15, 95% BCa CI [.04, .28]) and descriptive norm (β= .05, BCa CI [.03, .32], κ^2= .06, 95% BCa CI [.004, .14]). Teachers who reported higher levels of conscientiousness had more positive self-efficacy and descriptive norms which related to stronger intentions to act inclusively. TPB variables did not mediate the relationship between any other personality trait and intentions.

Predicting Teacher Reported Behaviour.

We regressed reported inclusive behaviour on demographic variables (Step 1), personality traits (Step 2: extraversion, neuroticism, openness, conscientiousness and agreeableness) and on intentions, self-efficacy and controllability (Step 3). Ajzen (1991) proposed that only intention and PBC components (self-efficacy and controllability) have direct effects on behaviour. Attitudes (instrumental and affective) and subjective norms (injunctive and descriptive) were therefore excluded from the model as TPB states these are predictors of intentions only.

Inspection of the residual plots and scatterplots suggested assumptions of linearity and homoscedasticity were violated, which has implications for significance testing. These problems are overcome by using robust methods such as bootstrapping (Chernick, 2008). We therefore applied bootstrap techniques when running the analysis.

Results showed at Step 1, demographic variables did not account for a statistically significant proportion of the variance (R^2=.03, p=.578). The inclusion of personality traits did not significantly increase R^2 (R^2=.07, R^2_{change}=.04, p=.641). TPB variables resulted in a significant increase to R^2 (R^2=.25, R^2_{change}=.18, p=.002). Only self-efficacy was a significant predictor of reported inclusive behaviour (β=.36 CI [.01, .71] p=.052). See Table 3. Note that 95% confidence intervals are reported in parentheses. Confidence intervals and standard errors are based on 1000 bootstrap samples.

[Table 3 about here]

Personality as a Moderator in TPB Relationships

As research suggests personality variables may moderate TPB component relationships, Hayes' (2013) PROCESS macro was used to examine this. A significant moderation effect of conscientiousness was found in the relationship between intentions and controllability (β= -.24, 95% CI [-.47, -.01], t= -2.02, p=.045). Follow up analysis using simple slopes indicated that when conscientiousness is low, there was a significant relationship between intentions and controllability (β=.23, 95% CI [.05, .40], t=2.50, p=.013). Neuroticism and extraversion did not significantly moderate the relationship between subjective norms (injunctive and descriptive norms) and intentions.

Discussion

The study is the first to apply TPB prospectively to understand the relationship between teachers' cognitions, personality and reported inclusive behaviours for children with ID. Instrumental attitude, descriptive norm, self-efficacy and

neuroticism were significant predictors of teachers' inclusive intentions. Conscientiousness had an indirect effect on teachers' inclusive teaching intentions by impacting self-efficacy and descriptive norm beliefs. Similar to previous research (Conner et al., 2007; Rhodes et al., 2002), conscientiousness also had a moderating effect in the relationship between intentions and controllability. Intentions, however, did not have an independent effect on reported behaviour. Self-efficacy was the only significant predictor of reported inclusive behaviour.

We provide further support for the importance of self-efficacy within an educational setting and, in particular, for working with children with ID. In the formation of intentions, it seems that teachers look to their own perceived competence. Consistent with previous findings, self-efficacy had the strongest relationship with intention to act inclusively (Brady & Woolfson, 2008; Sharma et al., 2012; Woolfson & Brady, 2009). Our findings echoed those of research which has demonstrated that when different dimensions of PBC (self-efficacy and controllability) are measured, it is the former which is most important (Pertl et al., 2010; Rhodes & Courneya, 2003).

Teachers' instrumental attitude was a stronger predictor of inclusive intentions than affective attitude. This is in contrast to studies within health and social settings which have found affective attitudes to be more predictive of intentions (Kraft et al., 2005; Rise et al., 2008). This difference may relate to the target behaviour. We examined work behaviour whereas the focus in health and social settings is commonly behaviours that have personal benefits or consequences (exercising or smoking). Affective attitudes may not predict intentions for work behaviours because the behaviour still needs to be performed, regardless of the individual's emotions. Instrumental attitudes may be important as these involve the consideration of the

perceived benefits of the behaviour for the student, the school and the individual's professional reputation (Yan, 2014; Yan & Cheng, 2015). Teachers may place more weight on these beliefs because these show which actions will have optimal outcomes.

Perceptions about colleagues' inclusive teaching (i.e. descriptive norm) also predicted teacher intentions. Teachers were more likely to intend to act inclusively if they believed that this was typical behaviour of staff. This supports previous research showing descriptive rather than injunctive norm predicted intention (Manning, 2009; Rivis & Sheeran, 2003). This may also explain previous inconsistent findings on the role of subjective norm in teaching behaviours (e.g., Ahmmed et al., 2013; Alhassan, 2012; Batsiou et al., 2008; MacFarlane & Woolfson, 2013; Yan & Sin, 2013). Our results suggest that teachers were not influenced by whether they believe others want them to perform the behaviour as measured by the injunctive norm items. Instead, the pressure may come from beliefs that others perform the behaviour.

Intention, however, was not a significant predictor of teachers' reported classroom behaviour, a finding that is inconsistent with TPB (Ajzen, 1991). The lack of a link between intentions and behaviour has implications for TPB. We infer that the theory may not apply directly to the examination of teacher reported behaviours, at least in the context of working with children with ID. We found self-efficacy, rather than intention, to be an important predictor of reported behaviour. Teachers' perception of their own capabilities was the most important predictor of their reported inclusive behaviour. There are a number of possible explanations for why this is the case. When intention weakly predicts behaviour, PBC (self-efficacy and controllability) can have independent effects on behaviour (Ajzen, 1991). Teachers high in self-

efficacy may therefore perform the behaviour without the need to engage in a deliberative thought process involving the intention. Another explanation relates to the argument that self-efficacy is a motivational variable (Rhodes & Courneya, 2003, 2004; Williams & Rhodes, 2014) and that, without efficacy beliefs, effort may not be exerted to perform the behaviour. We suggest that self-efficacy may tap both motivation and ability. There is some support for this; Williams and Rhodes (2014) argued that self-efficacy should be viewed as an alternative to motivation.

The influence of teacher personality on TPB variables and reported behaviour was examined. Results showed that those high on neuroticism had more positive intentions towards including children with ID. As individuals higher on neuroticism are motivated to decrease perceived uncertainty (Johnson, Morgeson, & Hekman, 2012), we suggest that some teachers act inclusively in order to overcome anxiety that results from difficult tasks. It should be noted, however, that we found a small effect of neuroticism. Further, our prediction of extraversion moderating the relationship between intentions and behaviour was not supported. Extraversion may not impact teachers' inclusive intentions or reported behaviours.

In support of previous research (Conner & Abraham, 2001; Davies, Mummery, & Steele, 2010; McEachan et al., 2010), TPB components significantly mediated the relationships between conscientiousness and intention. Teachers high in conscientiousness were more likely to report positive self-efficacy and descriptive norms which then related to inclusive teaching intentions. Individuals high on conscientiousness are typically determined, organised and strive for achievement (John & Naumann, 2010). As a result of this, such individuals expect to succeed (i.e.

have higher self-efficacy; Gellatly, 1996). This suggests that conscientiousness positively impacts efficacy beliefs which in turn influence reported behaviour.

An interesting finding relates to the moderating effect of conscientiousness in the relationship between intentions and controllability. This relationship was only significant for teachers low on conscientiousness. Individuals high on conscientiousness are more likely to be organised and strive for achievement, whereas individuals scoring lower on this may be less careful (John & Srivastava, 1999). Those low on conscientiousness may give more value to the controllability component because this will place the responsibility on environmental factors rather than on themselves when forming their intention.

Implications

Perceptions of colleagues' inclusive teaching was important to individual teachers' own inclusive intentions. This indicates the importance of a school climate which encourages inclusion and suggests a role of the school environment in fostering such beliefs. Providing head teachers with information on the promotion of positive school ethos may be beneficial to inclusive teaching intentions. Further, the importance of self-efficacy in teachers' reported inclusive behaviours suggests that strengthening teachers' self-efficacy beliefs may increase willingness to use inclusive teaching strategies.

Limitations

The use of self-report methods is a possible limitation of the study. Common method variance and socially desirable responding are well documented arguments against the use of self-report behaviour measures (Campbell & Fiske, 1959; Van de Mortel,

2008). However, procedural remedies proposed by Podsakoff et al. (2003) were used

in the present study to reduce common method variance (see Method section). Also,

confidentiality was assured in order to help combat social desirability. Participants

utilized the full range of the self-report scales (i.e. some participants did indeed

report that they frequently employed inclusive teaching practices, while others did

not). Furthermore, strong relationships between teachers' self-reported and observed

behaviour in the classroom have been found elsewhere (Clunies-Ross, et al, 2008;

Desimone, 2009; Stanec, 2009), increasing our confidence in the validity of the

results. That said, although this study has established which beliefs are likely to

impact whether teachers perceive themselves as making adaptations and this is

consistent with the theoretical expectations, it is important to recognise that the

nature and extent of these adaptations now calls for closer attention. Future research

may address this by using a multi-method approach to measuring actual practice

(e.g., teacher logs, observation).

Conclusion

Examining teacher beliefs and reported behaviour towards inclusion is important to

ensuring the successful inclusion of children with disabilities in mainstream schools.

This was the first study to investigate this issue using the two-component TPB

framework and to examine the role of personality. Self-efficacy was the only

significant predictor of reported inclusive behaviour, suggesting that it is more

important in the prediction of teacher behaviours than behavioural intentions. This

suggests the need for school leaders to promote an inclusive school climate. Further,

teacher education should focus on the development of teacher self-efficacy in

working with children with ID. Our findings demonstrate the application of TPB to

the understanding of teachers' reported inclusive behaviour.

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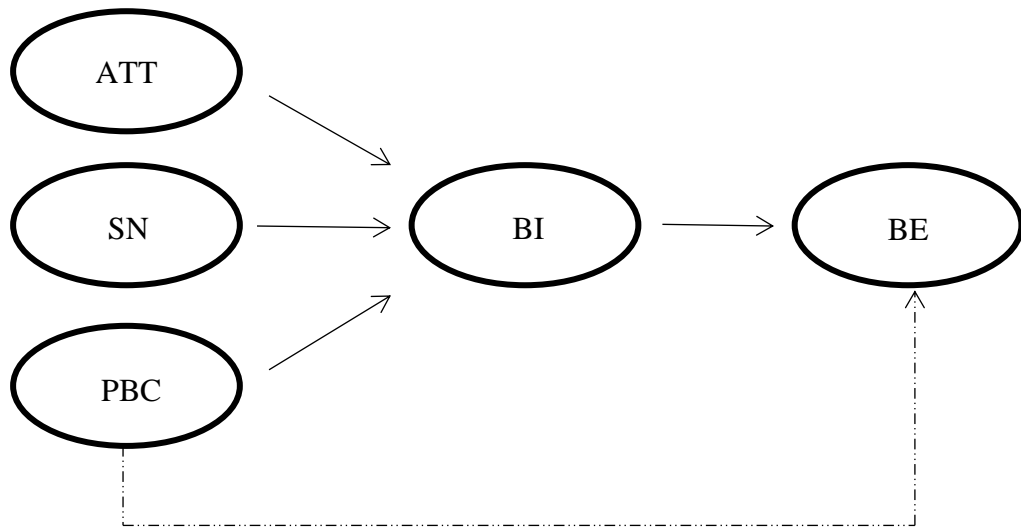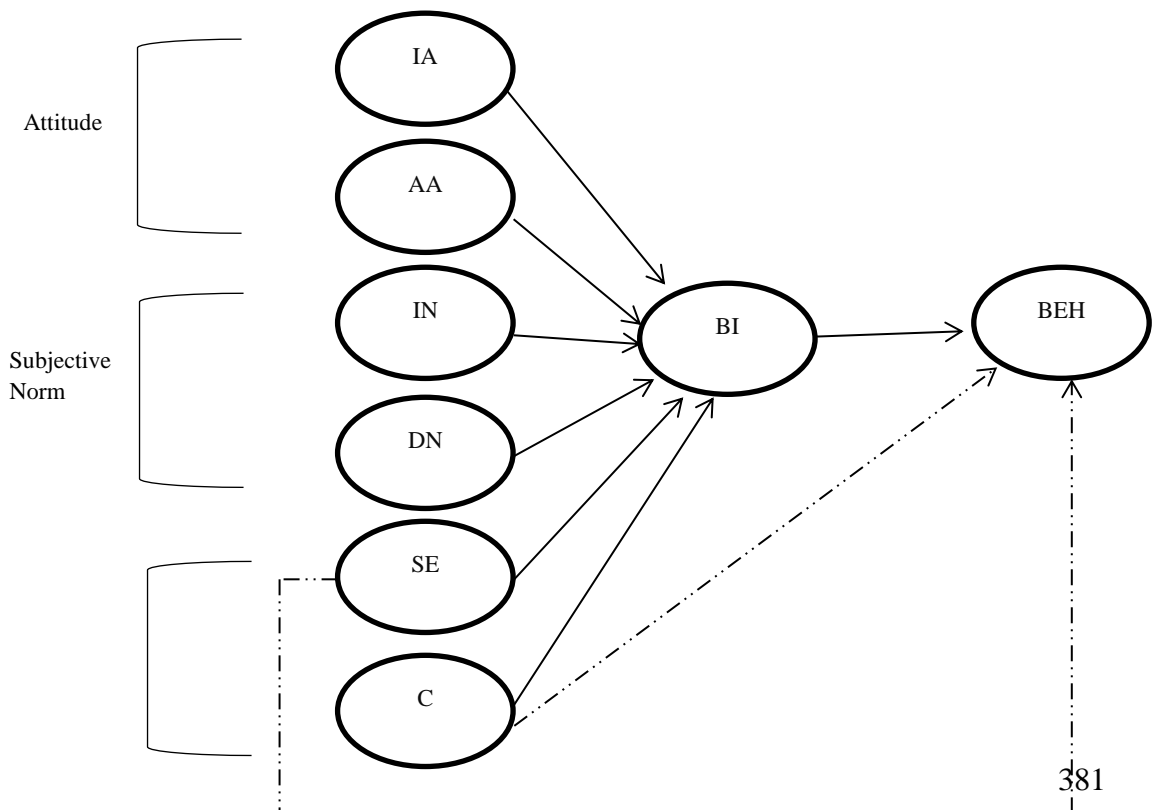*Figure 1:* Original Theory of Planned Behaviour (Ajzen, 1991)

ATT= Attitude; SN= Subjective norm; PBC= Perceptions of control; BI=

Behavioural intention; BEH=Behaviour.

PBC

Figure 2: Two-component Theory of Planned Behaviour.

IA= Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE= Self-efficacy; C= Controllability; BI= Behavioural intention; BEH=Behaviour.

Table 1. *Bivariate correlations, means and standard deviations of two-component TPB and personality variables.*

	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	S.D
1. IA		.69**	.54**	.23**	.32**	.24**	.57**	.41**	-.03	.14	.02	.13	.01	7.79	.97
2. AA			.53**	.09	.41**	.30**	.42**	.28**	-.01	.19*	.02	.07	-.14	6.14	1.08
3. IN				.26**	.32**	.13	.43**	.41**	-.001	.06	.06	.12	-.09	7.10	1.65
4. DN					.37**	-.12	.49**	.27*	-.04	.13	.06	.22**	.07	7.31	1.00
5. SE						.29**	.71**	.45**	.17*	.19*	.13	.05	-.09	7.81	.90
6. C							.16	.05	-.08	.11	-.12	-.09	-.03	6.43	1.28
7. Intent								.42**	.04	.24**	.07	.07	.10	7.90	.99
8. Beh									.13	.15	.14	.11	-.11	7.64	1.04
9. Open										.01	.24**	.11	-.01	3.68	.49
10. Cons											.18*	.41**	-.33**	4.22	.57
11. Extr												.14	-.36**	3.69	.76
12.Agre													-.22**	4.35	.47

		2.59	.74
13. Neur			

Note. **p <.001. *p <.05. *N*'s range from 140 to 145 due to occasional missing data for all variables excluding Beh. *N* for Beh was 81.

IA= Instrumental attitude; AA= Affective attitude; IN= Injunctive norm; DN= Descriptive norm; SE= Self-efficacy; C=

Controllability; Intent= Behavioural intention; Beh=Behaviour. Open= Openness. Cons= Conscientiousness. Extr= Extraversion.

Agre=Agreeableness. Neur=Neuroticsim.

Table 2: *Predicting teachers' intentions*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.08	.08	3.78*			
Gender				-.18*	-.17*	-.06
Years' Exp				.11	.12	-.04
Training				.16	.20*	.11
2	.18	.10	2.83*			
Open					-.07	-.04
Consc					.22*	.12
Extr					.19*	.10
Agre					.02	-.08
Neur					.24*	.17**
3	.67	.49	28.85***			
IA						.28**
AA						.06
IN						.04
DN						.17*

SE	.50***
C	-.09

*** *p* <.001, ** p<.01, * *p* <.05. Open= Openness. Consc= Conscientiousness. Extr= Extraversion. Agre= Agreeableness. Neur= Neuroticism

IA= Instrumental attitude. AA= Affective attitude. IN= Injunctive norm. DN= Descriptive norm. SE= Self-efficacy. C=

Controllability.

Table 3: *Predictors of teachers' reported inclusive behaviour*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β	Step 3 β
1	.03	.03	.66			
Gender				-.32 (-.1.25, .50)	-.46 (-1.34, .56)	-.17 (-.94, .56)
Years' Exp				-.01 (-.03, .01)	-.01 (-.03, .01)	-.01 (-.03, .01)
Training				.22 (-.34, .65)	.18 (-.36, .60)	-.08 (-.67, .40)
2	.07	.04	.64			
Open					.14 (-.35, .67)	-.04 (-.51, .47)
Consc					.03 (-.54, .54)	-.03 (-.64, .51)
Extr					.17 (-.19, .60)	-.001 (-.37, .42)
Agre					.21 (-.37, .72)	.12 (-.46, .65)
Neur					-.001 (-.40, .36)	-.14 (-.46, .12)
3	.25	.18	5.48[**]			
Intent						.23 (-.16, 65)
SE						.36[*] (.01, 71)
C						-.01 (-.20, 14)

[***]$p <.001$, [**]$p<.01$, [*]$p =. 05$. Intent= Intention. SE= Self-efficacy; C= Controllability Open= Openness. Consc= Conscientiousness.

Extr= Extraversion. Agre= Agreeableness. Neur= Neuroticism.

Thank you for agreeing to take part in this research study

We are conducting a study which is interested in primary school teachers' experiences of working with children with intellectual difficulties and how these experiences vary between different teachers. We would appreciate your responses to some questions about this issue.

Some of the questions may appear similar but please answer each of them without considering any of your previous responses, there are no right or wrong answers.

It will not be possible to identify you as an individual from your responses.

Please read the information in the box below and then answer the questions on the next page. Thank you, your time is much appreciated.

Claire Wilson

We are interested in the factors which influence the inclusion of children with intellectual difficulties in mainstream schools.

We would like you to think of the term intellectual difficulties as including children who find it difficult to learn, understand new or complex information, communicate with others and cope independently. This can include children with a diagnosis of intellectual difficulties, learning difficulties or those who have difficulties in these areas but do not have a diagnosis.

<u>**Example**</u>

To answer most of the questions in this questionnaire you will need to place a tick somewhere on a response scale from 1 to 9. For example, imagine you were asked;

All children should receive free school lunches;

Strongly Disagree:____:____:____:____:____:____:____:____:____: Strongly Agree

  Here, you would put the tick close to "Strongly Agree" the more that you agree that all children should receive free lunches. You would put your tick closer to "Strongly Disagree" the less you agree that children should receive free lunches.

Please answer each of the following questions with regards to **modifying curricular content when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

For me, *modifying curricular content when working with pupils with intellectual difficulties over the next two weeks would be;*

Extremely Aggravating :____:____:____:____:____:____:____:____:____: Extremely Satisfying

Extremely Negative :____:____:____:____:____:____:____:____:____: Extremely Positive

Extremely Undesirable :____:____:____:____:____:____:____:____:____: Extremely Desirable

Extremely Unimportant :____:____:____:____:____:____:____:____:____: Extremely Important

Extremely Unpleasant :____:____:____:____:____:____:____:____:____: Extremely Pleasant

Not At All Rewarding :____:____:____:____:____:____:____:____:____: Extremely Rewarding

Extremely Unenjoyable :____:____:____:____:____:____:____:____:____: Extremely Enjoyable

Extremely Detrimental :____:____:____:____:____:____:____:____:____: Extremely Beneficial

Extremely Unnecessary :____:____:____:____:____:____:____:____:____: Extremely Necessary

Extremely Stressful :____:____:____:____:____:____:____:____:____: Extremely Relaxing

A Terrible Idea :____:____:____:____:____:____:____:____:____: A Great Idea

Extremely Boring :____:____:____:____:____:____:____:____:____: Extremely Interesting

Please answer each of the following questions with regards to **modifying curricular content when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

I intend to modify curricular content when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

Most people who are important to me would want me to modify curricular content when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

I have the ability to modify curricular content when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

Of the teachers you know, how many do you think would themselves modify curricular content when working with pupils with intellectual difficulties over the next two weeks?
None of Them :____:____:____:____:____:____:____:____:____: **All of Them**

I have modified curricular content when working with pupils with intellectual difficulties over the past two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

It is completely up to me whether or not I modify curricular content when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

Many teachers will modify curricular content when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

How confident are you that you will be able to modify curricular content when working with pupils with intellectual difficulties over the next two weeks?
Not Confident :____:____:____:____:____:____:____:____:____: **Extremely Confident**

I will try to modify curricular content when working with pupils with intellectual difficulties over the next two weeks;
Not At All :____:____:____:____:____:____:____:____:____: **Very Often**

How much personal control do you feel that you have over modifying curricular content when working with pupils with intellectual difficulties over the next two weeks?
Not Control At All :____:____:____:____:____:____:____:____:____: **Complete Control**

The people in my life whose opinions I value would want me to modify curricular content when

working with pupils with intellectual difficulties over the next two weeks;

Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

To what extent have you modified curricular content when working with pupils with intellectual difficulties over the past two weeks?

To No Extent At All :____:____:____:____:____:____:____:____: **A Great Extent**

Please answer each of the following questions with regards to **modifying curricular content when working with pupils with intellectual difficulties,**

Place a tick in the interval that best describes your thoughts.

To what extent do you see yourself as being capable of modifying curricular content when working with pupils with intellectual difficulties over the next two weeks?

Very Incapable :____:____:____:____:____:____:____:____: **Very Capable**

How often do you think that other teachers will modify curricular content when working with pupils with intellectual difficulties over the next two weeks?

Never :____:____:____:____:____:____:____:____: **All The Time**

How likely is it that you will modify curricular content when working with pupils with intellectual difficulties over the next two weeks?

Extremely Unlikely :____:____:____:____:____:____:____:____: **Extremely Likely**

How often did you modify curricular content when working with pupils with intellectual difficulties over the past two weeks;

Never :____:____:____:____:____:____:____:____: **Very Frequently**

How much will factors outside your control influence whether or not you modify curricular content when working with pupils with intellectual difficulties over the next two weeks?

Not At All :____:____:____:____:____:____:____:____: **Very Much So**

I feel under social pressure to modify curricular content when working with pupils with intellectual difficulties over the next two weeks;

Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

How many days did you modify curricular content when working with pupils with intellectual difficulties over the past two weeks?

No days :____:____:____:____:____:____:____:____: **Everyday**

Thank you for completing the section regarding modifying curricular content. Please complete the next section which asks about adapting resources for pupils with intellectual difficulties.

Please answer each of the following questions with regards to **adapting regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

__For me__, adapting resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks would be;

Not At All Rewarding :____:____:____:____:____:____:____:____:____: Extremely Rewarding

Extremely Stressful :____:____:____:____:____:____:____:____:____: Extremely Relaxing

Extremely Unnecessary :____:____:____:____:____:____:____:____:____: Extremely Necessary

Extremely Aggravating :____:____:____:____:____:____:____:____:____: Extremely Satisfying

Extremely Unimportant:____:____:____:____:____:____:____:____:____: Extremely Important

Extremely Unpleasant :____:____:____:____:____:____:____:____:____: Extremely Pleasant

Extremely Unenjoyable :____:____:____:____:____:____:____:____:____: Extremely Enjoyable

Extremely Detrimental :____:____:____:____:____:____:____:____:____: Extremely Beneficial

Extremely Undesirable :____:____:____:____:____:____:____:____:____: Extremely Desirable

Extremely Boring :____:____:____:____:____:____:____:____:____: Extremely Interesting

Extremely Negative :____:____:____:____:____:____:____:____:____: Extremely Positive

A Terrible Idea :____:____:____:____:____:____:____:____:____: A Great Idea

Please answer each of the following questions with regards to **adapting regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

Many teachers will adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

How confident are you that you will be able to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks?
Not Confident :____:____:____:____:____:____:____:____:____: **Extremely Confident**

I have adapted regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the past two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

Most people who are important to me would want me to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties in the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

It is completely up to me whether or not I adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

I intend to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

How many days did you adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the past two weeks?
No days :____:____:____:____:____:____:____:____:____: **Everyday**

The people in my life whose opinions I value would want me to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

I have the ability to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;
Strongly Disagree :____:____:____:____:____:____:____:____:____: **Strongly Agree**

To what extent have you adapted regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the past two weeks?
No Extent At All :____:____:____:____:____:____:____:____:____: **A Great Extent**

Of the teachers you know, how many do you think would themselves adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two

weeks?

None of Them :____:____:____:____:____:____:____:____: All of Them

Please answer each of the following questions with regards to **adapting regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

How much personal control do you feel that you have over adapting regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks?   **No Control At All** :____:____:____:____:____:____:____:____: **Complete Control**
I feel under social pressure to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;   **Strongly Disagree** :____:____:____:____:____:____:____:____: **Strongly Agree**
To what extent do you see yourself as being capable of adapting regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks?   **Very Incapable** :____:____:____:____:____:____:____:____: **Very Capable**
How often do you think that other teachers will adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks?   **Never** :____:____:____:____:____:____:____:____: **All the Time**
How likely is it that you will adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks?   **Extremely Unlikely** :____:____:____:____:____:____:____:____: **Extremely Likely**
How much will factors outside your control influence whether or not you adapt regular resources when working with pupils with intellectual difficulties over the next two weeks?   **Not At All** :____:____:____:____:____:____:____:____: **Very Much So**
I will try to adapt regular resources (e.g. textbooks, worksheets) when working with pupils with intellectual difficulties over the next two weeks;   **Not At All** :____:____:____:____:____:____:____:____: **Very Often**
How often did you adapt regular resources (e.g. textbooks, worksheets) while working with pupils with intellectual difficulties over the past two weeks;   **Never** :____:____:____:____:____:____:____:____: **Very Frequently**

Thank you for completing the section regarding adapting resources. Please complete the next section which asks about

adapting the pace of instruction for pupils with intellectual difficulties.

Please answer each of the following questions with regards to **adapting the pace of instruction when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

__For me__, adapting the pace of instruction when working with pupils with intellectual difficulties over the next two weeks would be;

Extremely Unenjoyable :____:____:____:____:____:____:____:____:____: Extremely Enjoyable

Extremely Detrimental :____:____:____:____:____:____:____:____:____: Extremely Beneficial

Extremely Undesirable :____:____:____:____:____:____:____:____:____: Extremely Desirable

Extremely Negative :____:____:____:____:____:____:____:____:____: Extremely Positive

Extremely Unpleasant :____:____:____:____:____:____:____:____:____: Extremely Pleasant

Extremely Boring :____:____:____:____:____:____:____:____:____: Extremely Interesting

Extremely Aggravating :____:____:____:____:____:____:____:____:____: Extremely Satisfying

A Terrible Idea :____:____:____:____:____:____:____:____:____: A Great Idea

Not At All Rewarding :____:____:____:____:____:____:____:____:____: Extremely Rewarding

Extremely Unimportant :____:____:____:____:____:____:____:____:____: Extremely Important

Extremely Unnecessary :____:____:____:____:____:____:____:____:Extremely Necessary

Extremely Stressful :____:____:____:____:____:____:____:____: Extremely Relaxing

Please answer each of the following questions with regards to **adapting the pace of instruction when working with pupils with intellectual difficulties**.

Place a tick in the interval that best describes your thoughts.

I have the ability to adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;
    Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

How likely is it that you will adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?
    Extremely Unlikely :____:____:____:____:____:____:____:____: **Extremely Likely**

The people in my life whose opinions I value would want me adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;
    Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

It is completely up to me whether or not I adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;
    Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

I have adapted the pace of instruction when working with pupils with intellectual difficulties over the past two weeks;
    Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

How often do you think that other teachers will adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?
    Never :____:____:____:____:____:____:____:____: **All the Time**

I will try to adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;
    Not At All :____:____:____:____:____:____:____:____: **Very Often**

How confident are you that you will be able to adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?
    Not Confident :____:____:____:____:____:____:____:____: **Extremely Confident**

How often did you adapt the pace of instruction when working with pupils with intellectual difficulties over the past two weeks;
    Never :____:____:____:____:____:____:____:____: **Very Frequently**

Most people who are important to me would want me to adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;

Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

How much personal control do you feel that you have over adapting the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?

No Control At All :____:____:____:____:____:____:____:____: **Complete Control**

Please answer each of the following questions with regards to **adapting the pace of instruction when working with pupils with intellectual difficulties**.

 Place a tick in the interval that best describes your thoughts.

I intend to adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;

Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

Of the teachers you know, how many do you think would themselves adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?

None of Them :____:____:____:____:____:____:____:____: **All of Them**

To what extent do you see yourself as being capable of adapting the pace of instruction when working with pupils with intellectual difficulties over the next two weeks?

Very Incapable :____:____:____:____:____:____:____:____: **Very Capable**

How many days did you adapt the pace of instruction when working with pupils with intellectual difficulties over the past two weeks?

No days :____:____:____:____:____:____:____:____:**Everyday**

I feel under social pressure to adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;

Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

How much will factors outside your control influence whether or not you adapt the pace of instruction when working with pupils with intellectual difficulties over the two weeks?

Not At All :____:____:____:____:____:____:____:____: **Very Much So**

Many teachers will adapt the pace of instruction when working with pupils with intellectual difficulties over the next two weeks;

Strongly Disagree :____:____:____:____:____:____:____:____: **Strongly Agree**

To what extent have you adapted the pace of instruction when working with pupils with intellectual difficulties over the past two weeks?

No Extent At All :____:____:____:____:____:____:____:____: **A Great Extent**

Thank you for completing the section regarding adapting the pace. Please complete the next section which asks some questions about you.

The next section of the questionnaire asks questions about the type of person you are at work. Please write a number next to each of the following statements to indicate the extent to which you agree or disagree.

1	2	3	4	5
Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

At work, I am someone who…

1. _____ is talkative

2. _____ tends to find fault with others

3. _____ does a thorough job

4. _____ is depressed, blue

5. _____ is original, comes up with new ideas

6. _____ is reserved

7. _____ is helpful and unselfish with others

8. _____ can be somewhat careless

9. _____ is relaxed, handles stress well.

10. _____ is curious about many different things

11. _____ is full of energy

12. _____ starts quarrels with others

13. _____ is a reliable worker

14. _____ can be tense

15. _____ is ingenious, a deep thinker

16. _____ generates a lot of enthusiasm

17. _____ has a forgiving nature

18. _____ tends to be disorganized

23. _____ tends to be lazy

24. _____ is emotionally stable, not easily upset

25. _____ is inventive

26. _____ has an assertive personality

27. _____ can be cold and aloof

28. _____ perseveres until the task is finished

29. _____ can be moody

30. _____ values artistic, aesthetic experiences

31. _____ is sometimes shy, inhibited

32. _____ is considerate and kind to almost everyone

33. _____ does things efficiently

34. _____ remains calm in tense situations

35. _____ prefers work that is routine

36. _____ is outgoing, sociable

37. _____ is sometimes rude to others

38. _____ makes plans and follows through with them

39. _____ gets nervous easily

19.____ worries a lot

20.____ has an active imagination

21____ tends to be quiet

22.____ is generally trusting

40.____ likes to reflect, play with ideas

41.____ has few artistic interests

42.____ likes to cooperate with others

43.____ is easily distracted

44.____ is sophisticated in art, music, or literature

Please Turn Over.

Finally, please answer a few general questions about yourself.

What is your gender? ____ Female ____Male ____Prefer Not to Say	**What age are you?** ____ Age in Years ____Prefer Not to Say
What age are the children you normally teach? ____ 4-6 years ____7-10 years ____11-12 years	**How many children are in the class you normally teach?** _____ children
How many years of experience teaching do you have? ____ Years	**How many years of experience of teaching pupils with intellectual difficulties do you have?** ____ Years ____None
Is there currently a pupil(s) with intellectual difficulties in the class you normally teach? ____ Yes, Please specify how many; _____ ____Yes, but the child does not have a diagnosis ____ No	**Have you completed any special education training? If yes, please provide details of this** _____ No ____Yes. Please specify: _____ _
Which of the following qualifications do you have: ____ Bachelor in Education ____ Postgraduate Certificate ____ Postgraduate Diploma ____ Masters Other:_____ _	**Please add any comments you feel are relevant;**

Please note that the following questions are only being asked in order to match your responses on this questionnaire with your responses on the questionnaire you will be asked to complete two weeks from now. You will not be identified as an individual on the basis of this information.

What is the first letter of your mother's maiden name? _____	What is the last letter of your street name? _____
What is the last letter of your mother's maiden name? _____	What was the name of your first pet? _____
What is the first letter of your street name? _____	

Appendix 3; Study 1 Preliminary Analysis – Predicting Teacher Reported Behaviour Using the One-Component TPB.

Descriptive statistics.

Table X shows means, standard deviations, and bivariate correlation coefficients for the scales used in the study. The means suggested that teachers reported high levels of subjective norm and PBC. Attitude was the lowest scoring variable. Means also indicated that teachers reported high scores of inclusive behaviour as the mean was 7.63 out of a possible 9. The correlations showed that attitude, PBC and subjective norm were all significantly correlated with intention with the strongest relationship being with subjective norm, followed by PBC and then attitude. With regards to reported behaviour, similar results were found. Attitude, subjective norm and PBC were significantly correlated with behaviour as was behavioural intention.

Table X: *Bivariate Correlations, Means and Standard Deviations of Measured Variables.*

	1.	2.	3.	4.	5.	Mean	S.D.
1. ATT		.48***	.43***	.53***	.37**	6.96	.94
2. SN			.28**	.57***	.43***	7.22	1.01
3. PBC				.55***	.33**	7.26	.84
4. Intent					.42***	7.90	.99
5. Beh						7.63	.97

$^{***}p<.001.$ $^{**}p<.01.$ $^{*}p<.05.$ ATT: Attitude; SN: Subjective norm; PBC= Perceptions of control; Intent= Behavioural intention; Beh=Reported behaviour.

Teachers' attitudes, subjective norms and PBC would behavioural intentions.

Multiple linear regression was used to determine which TPB components predicted behaviour intentions. Demographic variables (gender, years of experience and training) were entered at Step 1 as previous work (See Chapter 2 Section 2.3.1) has found these to be important to teacher beliefs towards inclusion. Attitude, subjective norm and PBC were added at Step 2. Data was found to meet the assumptions of multiple regression.

Linearity was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. No issues were detected thus errors were seen to be normally distributed. VIFs greater than 10 and tolerance statistics below .2 indicate a problem (Bowerman & O'Connell, 1990; Field, 2013). All values were within the acceptable levels thus indicating that multicollinearity was not an issue within the model. The assumption of independent errors was also met with a Durbin-Watson statistic of 1.95.

The examination of influential cases indicated that one case had a standardised residual greater than 2. The regression was run with this case out which did not change the results. Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the cut-off points suggesting this was not an issue. Stevens (2002) argued that a case should only be removed when Cook's distance is less than 1. For these reasons, the case was left in.

After checking these assumptions, regression tables were assessed (see Table X). The results showed that at Step 1, demographic variables accounted for a statistically significant proportion of the variance (R^2=.08, p= .012). Only gender was a significant independent predictor of intention (β= -.18, p= .032). When TPB

variables were added to the regression equation, this resulted in a significant increase to R^2 ($R^2= .49$, $R^2_{change}=.41$, $p < .001$). Attitude ($\beta=.21$, $p= .008$), subjective norm ($\beta=.34$ $p < .001$) and PBC ($\beta=.32$ $p < .001$) were all significant independent predictors of intention. No demographic variables were significant after the inclusion of TPB components. Supporting hypothesis 1a.1, the findings suggested that teachers with more positive attitudes, subjective norms and PBC were more likely to have higher intentions to work inclusively with a child with ID.

Table X: *TPB Predictors of Intention*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β
1	.08	.08	3.78[*]		
Gender				-.18[*]	-.08
Years' Exp				.11	.02
Training				.16	.08
2	.49	.41	32.80[***]		
ATT					.21[**]
SN					.34[***]
PBC					.32[***]

[***]$p <.001$, [**]$p<.01$, [*]$p <.05$. Years' Exp= Years of teaching experience; ATT= Attitude; SN= Subjective norm; PBC= Perceptions of control.

Teachers' behavioural intention and PBC would predict reported inclusive behaviour.

A multiple linear regression was conducted to identify the key predictors of teachers' reported inclusive behaviours when working with a child with ID. Reported behaviour was included as the dependent variable. Demographic variables (gender, years of experience and training) were entered at Step 1 as previous work has found these to be important in teacher inclusive behaviours. Intention and PBC were added at Step 2. Ajzen (1991) proposed that only intention and PBC have direct effects on behaviour. Attitudes and subjective norms were therefore excluded from the model. TPB argues these are predictors of intentions only.

Data was found to meet the assumptions of multiple regression. Linearity was investigated by inspection of residual plots and homoscedasticity was assessed using the scatterplot. No issues were detected thus errors were seen to be normally distributed. As the lowest tolerance statistics was .70 and the highest VIF was 1.42, multicollinearity was not a problem in the model. The assumption of independent errors was also met with a Durbin-Watson statistic of 2.24. With regards to checking influential cases, one case had a standardised residual greater than 2 however, Cook's distance, leverage, Mahalanobis, standardised DFBeta and covariance ratios were all within the cut-off points suggesting this was not an issue.

After confirming the model had met the assumptions, regression tables were examined (see Table X). The results showed that at Step 1, demographic variables

did not accounted for a statistically significant proportion of the variance (R^2=.03, p= .578). When TPB variables were added to the regression equation, this resulted in a significant increase to R^2 (R^2= .21, R^2_{change}=.18, p= .001). This indicated that intention (β=.33, p= .009) was a significant predictor of reported inclusive behaviour. PBC did not have an independent effect on reported behaviour (β=.19 p=.106). The results demonstrated that teachers with more positive intentions towards inclusion of children with ID were more likely to act inclusively.

Table X: *TPB Predictors of Reported Behaviour*

Step and Predictors	R^2	R^2_{change}	F_{change}	Step 1 β	Step 2 β
1	.03	.03	.66		
Gender				-.11	-.03
Years' Exp				-.07	-.09
Training				.11	-.03
2	.21	.18	8.34[**]		
Intention					.33[**]
PBC					.19

[***] p <.001, [**] p<.01, [*] p <.05. Years' Exp= Years of teaching experience. PBC= Perceptions of control.

Hypothesis 1a.1c: Teachers' behavioural intention would mediate the relationship between TPB components and reported behaviour.

Mediation analyses were conducted using Hayes' (2013) PROCESS macro to test whether intention mediated the rlationships between attitude and reported behaviour, subjective norm and reported behaviour and PBC and reported behaviour.

Results showed attitude had a significant indirect effect on reported behaviour through intention (β= .15, BCa CI [.009, .41]). This represented a moderate effect, κ^2= .14, 95% BCa CI [.01, .35]. Intention was also found to significantly mediate the relationship between PBC and reported behaviour (β= .20, BCa CI [.03, .51]) again representing a moderate effect, κ^2= .15, 95% BCa CI [.02, .37]. Intention was not a significant mediator of the relationship between subjective norms and reported behaviour. (β= .13 BCa CI [-.05, .37]). These findings highlight the importance of intentions in the relationship between teacher attitudes, PBC and reported inclusive behaviour.
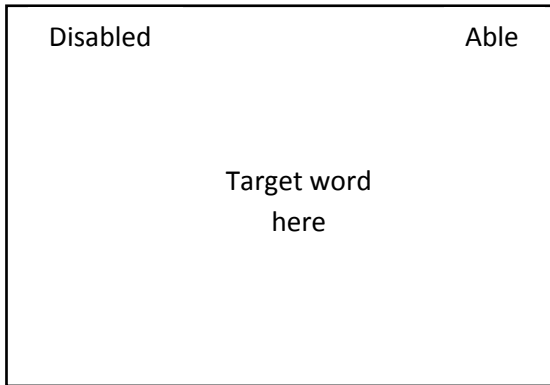
Summary

The study was the first to apply the one-component TPB prospectively to understand the relationship between teachers' beliefs, personality and reported inclusive behaviours for children with ID. Results showed that teachers' with more positive attitudes, subjective norms and PBC had higher behavioural intentions to use inclusive strategies. The findings also demonstrated that teachers' with more positive intentions were more likely to later report working inclusively with children with ID. Further, intentions mediated the relationship between attitudes and reported behaviour and PBC and reported behaviour. This supports the application of the one-component TPB to an education setting.
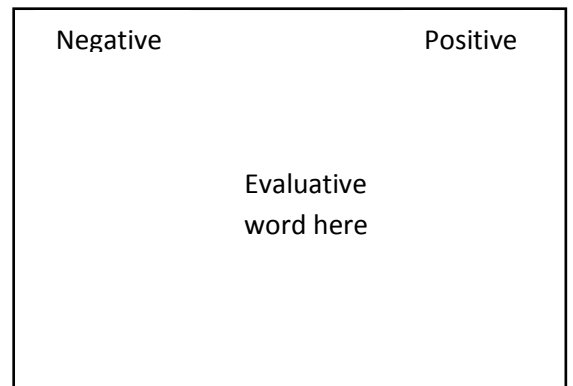
It should be noted however, that the one-component TPB only accounted for 21% of the variance in reported inclusive behaviour. Given that the two-component model has higher predictive validity, there is a need to implement this in order to strengthen the prediction of teachers' reported behaviour.

Appendix 4: Examples of computer screen at each block of the IAT.
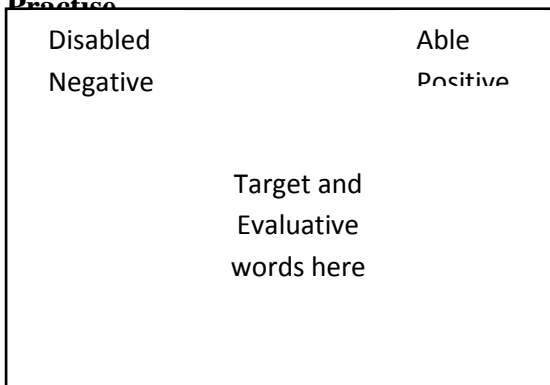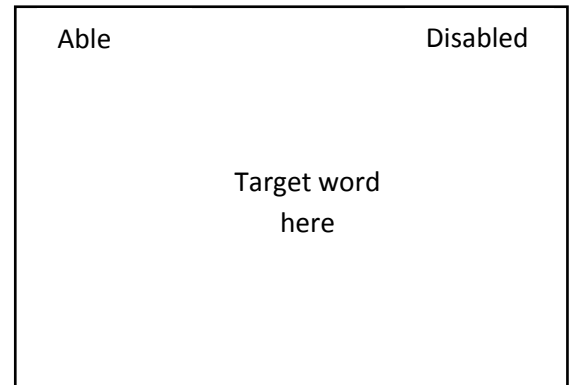
Block 1 – Target Practise

Disabled	Able
Target word	
here	

Block 2 – Evaluation Practise

Negative	Positive
Evaluative	
word here	

Block 3 and 4 – Compatible Tests Practise

Disabled	Able
Negative	Positive
Target and	
Evaluative	
words here	

Block 5 –Target Incompatible

Able	Disabled
Target word	
here	

Block 6 and 7 – Incompatible Tests

Able	Disabled
Negative	Positive
Target and	
Evaluative	
words here	
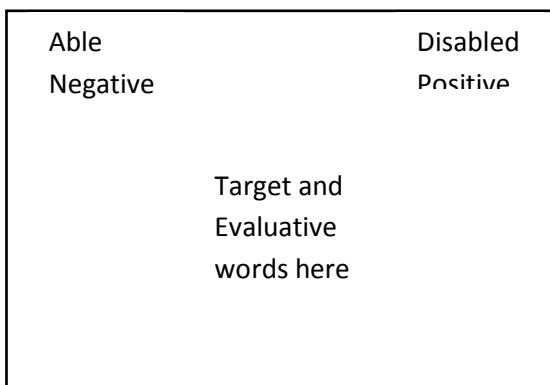
Appendix 5: Examples of computer screen at each block of the ST-IAT

Block 1 – Evaluation Practise

Positive	Negative
	Evaluation
	word here
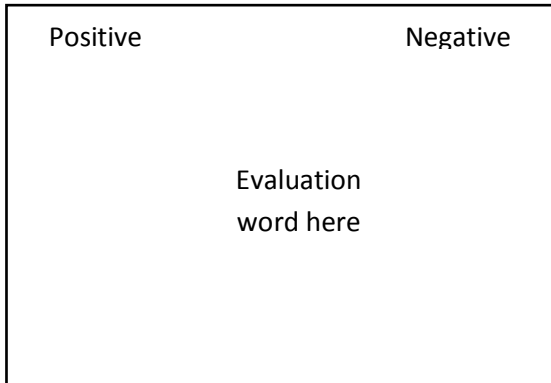
Block 2 – Compatible Practise

Positive	Negative
Target Category	
	Evaluation
	and target
	words here
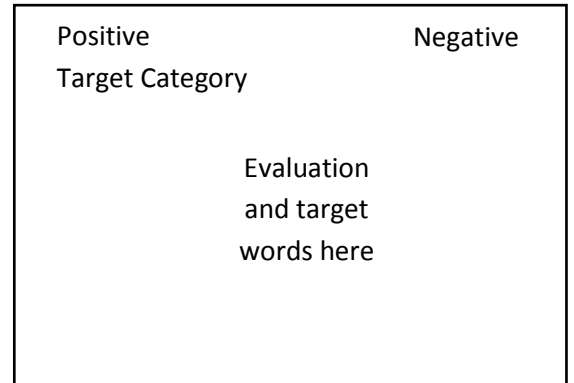
Block 3 – Compatible Test Practise

Positive	Negative
Target Category	
	Evaluation
	and target
	words here

Block 4 – Incompatible
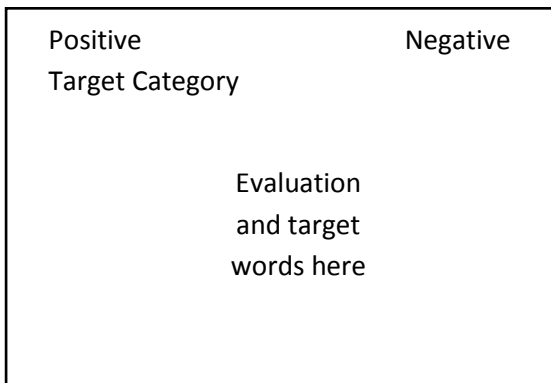
Positive	Negative
	Target
	Category
	Evaluation
	and target
	words here
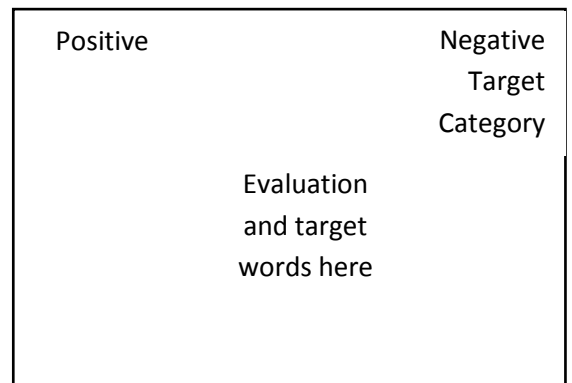
Block 5 – Incompatible Test

Positive	Negative
	Target
	Category
	Evaluation
	and target
	words here