



Wilson, Claire and Woolfson, Lisa Marks and Durkin, Kevin and Elliott, Mark A. (2016) The impact of social cognitive and personality factors on teachers' reported inclusive behaviour. British Journal of Educational Psychology. ISSN 0007-0998 , <http://dx.doi.org/10.1111/bjep.12118>

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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 & 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, Bebetos, 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 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 ($\alpha=.94$) and a mean affective attitude score ($\alpha=.93$).

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 ($\alpha=.93$) and mean descriptive norm ($\alpha=.89$) 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 ($\alpha=.89$) and controllability ($\alpha=.66$) 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 ($\alpha=.90$).

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 ($\alpha=.95$).

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' ($\alpha=.83$). Extraversion was measured using items such as 'I am someone who is full of energy' ($\alpha=.86$). Neuroticism was assessed using items such as 'I am someone who worries a lot' ($\alpha=.80$). An example openness item was 'I see myself as someone who has an active imagination' ($\alpha=.69$). Finally, an example agreeableness item was 'I am someone who is considerate and kind to almost everyone' ($\alpha=.72$). 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. Mediation 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 ($\beta= -.18$ $p=.032$) 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 ($R^2=.18$, $R^2_{\text{change}}=.10$, $p=.019$). At this Step, gender ($\beta= -.17$, $p=.05$), training ($\beta=.20$, $p=.022$), conscientiousness ($\beta=.22$, $p=.023$), extraversion ($\beta=.19$, $p=.042$) and neuroticism ($\beta=.24$, $p=.010$) were significant predictors of intentions. The inclusion of TPB variables significantly increased R^2 ($R^2=.67$, $R^2_{\text{change}}=.49$, $p<.001$). Instrumental attitude ($\beta=.28$, $p=.001$), descriptive norms ($\beta=.17$ $p=.010$) and self-efficacy ($\beta=.50$ $p<.001$) were independent predictors of intention. Neuroticism was the only personality trait ($\beta=.17$, $p=.008$) 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 ($\beta=.16$, BCa CI [.005, .15], $\kappa^2=.15$, 95% BCa CI [.04, .28]) and descriptive norm ($\beta=.05$, BCa CI [.03, .32], $\kappa^2=.06$, 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 ($R^2=.07$, $R^2_{\text{change}}=.04$, $p=.641$). TPB variables resulted in a significant increase to R^2 ($R^2=.25$, $R^2_{\text{change}}=.18$, $p=.002$). Only self-efficacy was a significant predictor of reported inclusive behaviour ($\beta=.36$ 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 ($\beta= -.24$, 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 ($\beta=.23$, 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; Ravis & 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, Little, & Kienhuis, 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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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
13. Neur														2.59	.74

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. Agree=Agreeableness. Neur=Neuroticism.

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. Agree= 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.