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Abstract

Research has shown that the attitudes of teachers toward pupils can influence their academic and social behavior. In the context of special education needs (SEN), the same processes likely apply, and there is evidence that teachers' attitudes influence the success of inclusive initiatives. While the literature on attitudes to pupils with SEN is limited, there is also a heavy reliance on self-reported methodologies that are susceptible to presentation bias. Across two studies, the current research employed the Implicit Relational Assessment Procedure (IRAP) to measure the implicit attitudes of teachers in training ($N=20$), primary school teachers ($N=20$), and post-primary teachers ($N=20$) and a group of controls ($N=20$) toward pupils with Emotional and Behavioral Difficulties (EBD), versus the implicit attitudes of primary school teachers ($N=20$) and post-primary teachers ($N=20$) toward typically-developing pupils. Results indicated that teachers possessed greater negative implicit and explicit attitudes toward pupils with EBD, when compared to typically-developing pupils.

Key words: IRAP: Implicit Attitudes: Primary teachers: Post Primary teachers: Mainstream Education

Introduction

There is some consensus that teachers' expectations of pupils influence (consciously or unconsciously) their behavior in class. Various models of how this occurs have been offered, one of which suggests that students appraise the differential behaviors of teachers as indicators of high or low achievement (Frederick, Deitz, Bryceland, and Hummel, 2000), and this, in turn, influences self-efficacy relative to others. It is important to recognize that achievement in this context is not restricted to academic matters, but includes socialization and personality (Weinstein, 2002). Taken together, in the context of Special Education Needs (SEN), teacher expectations of, and attitudes toward, pupils with SEN likely reflect the same processes as above, but may also include the perception that some of these individuals are more difficult to educate than typically-developing pupils (Bay and Bryan, 1991; Nitnas et al. 2006). For example, it is widely accepted that the success of inclusive initiatives depends upon teachers' attitudes (e.g., Hastings and Oakford, 2003), and on the sophistication of their skills in managing these populations (Koegel, Harrower, and Koegel, 1999). Specifically, Bekle (2004) reported that teachers respond differentially to pupils with SEN by demanding less, calling upon them less frequently, praising them less, and criticizing them more. Furthermore, there is evidence that teachers' attitudes in this regard are influenced primarily by perceptions of their own skills and the provision of appropriate resources (Butler and Shevlin, 2001). For example, a study of teachers in Ireland reported that they feel ill-equipped in managing pupils with SEN effectively because of inadequate support (Scanlon and McGilloway, 2006).

While the existing literature on teachers' attitudes to pupils with SEN is not extensive in and of itself, it is further limited by a reliance upon self-report (i.e., explicit or direct) methodologies. This may create a considerable limitation given that it is well established that

explicit measures are susceptible to presentation bias (Wilson and Dunn, 2004), and teachers may be naturally reticent to explicitly express negative attitudes toward pupils with SEN.

Only a handful of studies have investigated teachers' implicit attitudes to pupils with SEN. Using the Implicit Association Test (IAT), Hein, Grumm, and Fingerle (2011) assessed the implicit attitudes of trainee teachers, specializing in SEN, toward pupils with disabilities. Results demonstrated that the trainee teachers readily paired the word "Disabled" with "Unpleasant", thus reflecting a potential negative bias toward pupils with disability. In a similar study, but now using the Implicit Relational Assessment Procedure (IRAP), Kelly and Barnes-Holmes (2013) juxtaposed typically-developing pupils and pupils with autism, along with negative versus positive words. These contrasting categories were presented to behaviorally-trained tutors and mainstream school teachers. Results indicated that both groups of educators readily paired pupils with autism with negative words, again reflecting a negative bias, that was not reflected in their responding toward typically-developing pupils. It was also interesting from this study that this negative implicit bias predicted greater psychological suffering and professional burnout among the tutors (but not teachers). Barnes-Holmes et al. (2006) suggested that the conflict between what one thinks privately and what one might say publicly may inadvertently lead to various forms of psychological stress, which may account for this professional burnout and high turnover rates among the tutors.

In a similar, but more extensive study also using the IRAP but focusing on pupils with Emotional and Behavioral Difficulties (EBD), Scanlon and Barnes-Holmes (2013) attempted to reduce teachers' (experienced and trainees) negative implicit bias toward these pupils with the implementation of a stress management intervention and a behavioral training intervention. The stress management intervention appeared to effectively reduce the teachers' negative bias (although the effect was smaller for trainees). Although the behavioral training intervention did not appear to be effective, there was some evidence that this effect improved

if participants were exposed to the stress management intervention *first*. Only marginal decreases in negative bias toward EBD were found among teachers in training. It is interesting that this study also showed that the interventions reduced teachers' negativity towards inclusion generally, and reduced trainees' negativity about having a child with EBD in their classrooms. Furthermore, Markova, Pit-Ten Cate, Krolak-Schwerdt, and Glock (2016) found indifferent implicit attitudes of pre-service teachers toward pupils with SEN with immigrant backgrounds and positive attitudes toward pupils without immigrant backgrounds, using the evaluative priming task. On explicit measures, a high motivation to act without prejudice toward minorities was found, even though less favorable attitudes toward the inclusion of pupils with SEN (particularly those with behavioral problems) were also recorded.

Teachers' expectations of, and attitudes toward, pupils with EBD also likely reflect the same processes described above, and again include the perception that these are among the most difficult students to educate, especially when challenging behavior is displayed (Bay & Bryan, 1991; Nitnas et al., 2006). Indeed, several studies have highlighted the relationship between problem behavior and low academic performance (Lassen, Steele, and Sailor, 2006; McIntosh, 2005; Tobin and Sugai, 1999), as well as more office discipline referrals (Irwin et al. 2004).

Study 1, as outlined here, was similar to Scanlon and Barnes-Holmes (2013), which used the IRAP to examine teacher's implicit attitudes to pupils with EBD. The sub-category EBD was selected over the broader category of SEN because the former represents the most difficult sub-group of pupils to educate (see above) and thus it seemed likely that the IRAP would be able to tap into teachers' attitudes regarding these pupils. In order to facilitate clear distinctions in implicit attitudes, Study 1 juxtaposed "EBD Pupil" with "Teacher" within the IRAP. Put simply, it was predicted that teachers would show a preference for "Teacher" over "EBD Pupil", and thus would more readily associate "Teacher" with positive attributes than

negative attributes and more readily associate “EBD Pupil” with negative attributes than positive. Different sub-groups of teachers with different levels of teaching experience were also identified in order to determine whether there was a relationship between implicit attitudes to Teacher/EBD pupil and level of teaching experience. In order to assess whether the findings of Study 1 were specific to EBD pupils, Study 2 then examined teachers’ implicit attitudes to typically-developing pupils, where the IRAP instead juxtaposed “Teacher” and “Pupil”.

Study 1

Method

Participants

The participants were divided into four groups according to their levels and type of educational training and experience with pupils (control group, teachers in training, primary school teachers, and post-primary teachers). The control group ($N=20$) comprised undergraduate psychology students who had no previous experience of working directly with pupils with EBD in an educational setting (although these individuals would likely have had some knowledge of the difficulties associated with this label). The teachers in training ($N=20$) were postgraduate students pursuing a Higher Diploma in Education (i.e., teacher training) for post-primary teaching. All of these participants were engaged in teaching practice two days per week and had direct experience of working with pupils with EBD in their classrooms. The primary teachers ($N=20$) were all currently employed in primary schools; had a formal qualification in teaching; had at least two years teaching experience in mainstream education; and had direct experience of working with pupils with EBD. The post-primary teachers ($N=20$) were all currently employed as teachers in post-primary education; had a formal qualification in teaching; had at least two years teaching experience in mainstream education;

and had direct experience of working with pupils with EBD. None of the three groups of teachers, however, had *formal* qualifications for working with pupils with SEN.

The general strategy for recruiting numbers of participants was guided by the results of a recent meta-analysis of IRAP effects in the clinical domain, indicating that a minimum of $N = 29$ is required to achieve a power of 0.8 for first-order correlations, $N = 26$ for an independent samples t-test, and just $N = 8$ for a one-sample or repeated measures t-test (Vahey, Nicholson, & Barnes-Holmes, 2015).

Materials

The ORM Scale. An explicit measure (i.e., The Opinions Relative to Mainstreaming Scale; ORM) was employed in this study to assess self-reported attitudes towards intellectual disabilities within the classroom. The ORM Scale comprised a revised version of the Opinions Relative to Mainstreaming (ORM) Scale (Avramidis, Bayliss, and Burden, 2000). The original ORM Scale (Antonak and Larrivee, 1995; Larrivee, 1982) investigated attitudes to the generic concept of disabilities and was subsequently tailored by Avramidis et al. to fit an English context, and to incorporate attitudes to the concept of inclusion within education for all persons with disabilities. For the purposes of the current research, the ORM Scale was further modified to fit the Irish context and incorporated specific attitudes to the inclusion of pupils with EBD in mainstream education. The ORM Scale comprised four basic components. (i) The Demographic Questionnaire collected information primarily regarding each participant's teaching qualifications; number of years teaching experience; and additional training (if any) in special education. (ii) A Likert scale of attitudes to the general inclusion of pupils with EBD in mainstream education consisted of 12 items, such as "*The needs of students with EBD are best served through special separate classes*" was employed. Respondents were required to indicate their level of agreement with each statement by circling: Strongly Disagree; Disagree; Undecided; Agree; or Strongly Agree. (iii) Two

Emotional Reaction Scales measured reactions to the inclusion of both EBD pupils and excluded children from another school within the participants' own classrooms. The scale presented a short scenario: *If a new student who was described as having severe behavioral problems was about to join your class tomorrow, you would feel . . .* in conjunction with seven bipolar adjectives (e.g., uncomfortable/comfortable). Participants were required to respond on a 7-point scale from 1 (negative end – uncomfortable) to 7 (positive end – comfortable) as an indication of their reaction to the scenario on that particular dimension (i.e., level of discomfort). (iv) The final Likert scale within the ORM Scale measured participants' willingness to adapt their own teaching practices to include pupils with EBD. This scale comprised eight items, such as *"I will accept responsibility for teaching pupils with EBD within a whole school policy"*, against which participants once again circled their levels of agreement. Scoring the ORM Scale comprises the scores generated on each of the four sub-scales. The scores on the sub-scales are simply composites of the individual scores on each item. In all cases, a higher score indicates a more positive attitude.

The IRAP. The IRAP controlled all aspects of stimulus presentation and the recording of all participant responses. The IRAP contrasted two sample stimuli "Teacher" and "EBD Pupil"; and two categories of target stimuli comprising evaluative terms: six positive ("accommodating", "suitable", "cooperative", "pleasant", "calm", and "positive"); and six negative ("difficult", "non-compliant", "angry", "negative", "unpleasant", and "inappropriate") and the response options comprised the relational terms "similar" and "opposite". The various label-target combinations on the IRAP yield four trial-types; Teacher-Positive; Teacher-Negative; EBD Pupil-Positive; and EBD Pupil-Negative (see Figure 1). The IRAP (2008 version programmed in Visual Basic 6) recorded all response data, including accuracy and latency.

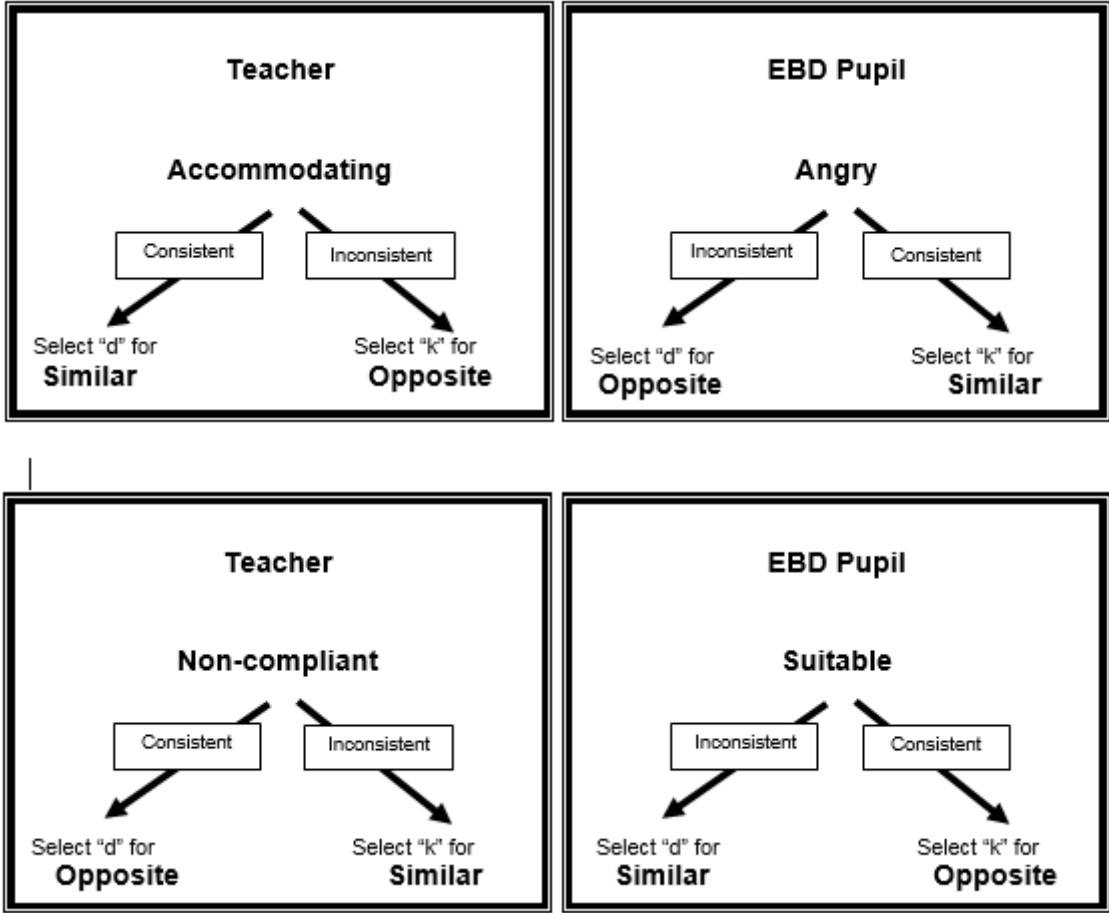


Figure 1. Schematic representation of the four trial-types in Study 1.

Procedure

The experimental sequence began with the ORM Scale immediately before exposure to the IRAP. However, the three groups of teachers (excluding the control group) completed the ORM Scale several days before exposure to the IRAP (and returned the completed scale to the Experimenter on that day).

The IRAP comprised a maximum of four pairs of practice blocks, followed by a set number of three pairs of test blocks. Each pair of blocks comprised of one consistent and one inconsistent block of trials. The blocks alternated between consistent and inconsistent blocks across the pairs such that two consistent or inconsistent blocks were never presented together. On each trial of the IRAP, a label at the top of the screen (“Teacher” or “EBD Pupil”); a target at the centre of the screen (e.g., “Accommodating” or “Difficult”), and two response options

(“Similar” and “Opposite”) at the bottom left and right of the screen were presented.

Participants responded on each trial using either the “d” key for the response option on the left or the “k” key for the response option on the right. The locations of the response options alternated from trial to trial in a quasi-random order, such that they did not remain in the same left-right locations for more than three successive trials.

When participants selected the response option that was deemed correct within that block of trials, an inter-trial interval of 400 ms was presented, after which the next trial was presented. When participants selected the response option that was deemed incorrect for that block of trials the stimuli remained on-screen and a red “X” appeared beneath the target stimulus. Only when the correct response option was selected did the program proceed directly to the 400 ms inter-trial interval (followed by the next trial). This pattern of trial presentations, with corrective feedback, continued until the entire block of 24 trials was presented. Trials were presented in a quasi-random order within each block with the constraint that each label was presented twice with each target stimulus across the 24 trials. Blocks of consistent trials required responding that was in accordance with what would be deemed generally as pro-teacher: Teacher-Positive/Similar; Teacher-Negative/Opposite; EBD Pupil-Positive/Opposite; and EBD Pupil-Negative/Similar. Inconsistent blocks required the opposite: Teacher-Positive/Opposite; Teacher-Negative/Similar; EBD Pupil-Positive/Similar; and EBD Pupil-Negative/Opposite. Half of the participants were first presented with a consistent block of trials, while the other half were first presented with an inconsistent block of trials.

When participants completed a block of trials, the IRAP program provided them with feedback on their performance during that block. The feedback consisted of a message informing them how accurately and how quickly they had responded. The latter was calculated from stimulus onset to the first correct response across all 24 trials within the

block. Participants were required to achieve a minimum accuracy of 80 percent correct and a maximum median latency of no more than 2000 ms on each block within a pair. If participants achieved both accuracy and latency criteria on a pair of practice blocks, they immediately proceeded to the first pair of test blocks. If participants failed a pair of practice blocks, practice blocks continued to a maximum of 4 block pairs. Failing to meet the criteria after 4 pairs of practice blocks terminated participation and these data were discarded.

A fixed set of six test blocks were presented with no accuracy or latency criteria required for participants to progress from one block to the next. However, percentage correct and median latency were presented at the end of each block to encourage participants to maintain the accuracy and latency levels they had achieved during the practice blocks.

Results The IRAP

Consistent with typical IRAP analyses, the four D_{IRAP} scores (using the D-algorithm to standardize the differences in response latency between consistent and inconsistent blocks on each of the four trial-types) were calculated for each group of participants (see Nicholson & Barnes-Holmes, 2012). These effects are presented in Figure 2.

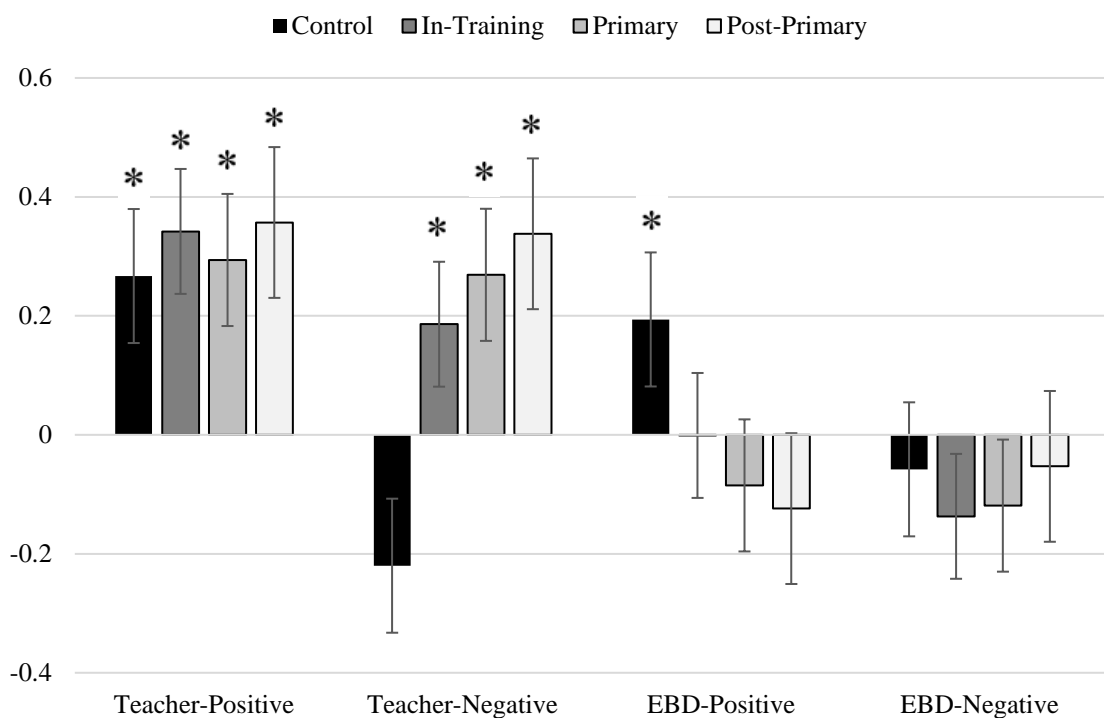


Figure 2. D_{IRAP} scores (and SE bars) for the four trial-types across the four groups of participants in Study 1. Significant effects are denoted by *.

The D_{IRAP} scores recorded with the three groups of teachers indicated that responding was always in the predicted direction (Teacher-Positive/EBD Pupil-Negative). Specifically, all three groups of teachers responded more readily to Teacher-Positive/Similar and Teacher-Negative/Opposite, than Teacher-Positive/Opposite and Teacher-Negative/Similar, suggesting that a positive bias toward teacher existed. Their attitudes towards EBD Pupil were less strong, although still in the predicted direction. That is, teachers responded more readily to EBD-Positive/Opposite and EBD-Negative/Similar, than EBD-Positive/Similar and EBD-Negative/Opposite, suggesting a negative bias towards EBD Pupil. In contrast, some of the trial-type performances of the control group differed considerably from the teachers. Similar to the teachers, they showed a pro-teacher bias on Teacher-Positive, but an anti-teacher bias on Teacher-Negative. The controls also demonstrated a pro-EBD Pupil bias on EBD-Positive, and a small anti-EBD bias on EBD-Negative. This suggests that the anti-EBD pupil effects are specific to teachers.

For between group comparisons, the D_{IRAP} scores were entered into a 4x4 mixed ANOVA, with group as the between participant variable and trial-type as the within participant variable. The analysis revealed a significant main effect for trial-type [$F(3, 76) = 9.50, p < .0001, \eta_p^2 = .255$], however the main effect for group only approached significance [$F(3, 76) = 2.61, p = .0571, \eta_p^2 = .103$], and there were no interaction effects (all p 's $> .05$). Post hoc tests (Scheffe) indicated that the significant trial-type differences lay between Teacher-Positive and EBD Pupil-Positive ($p < .0001$); Teacher-Positive and EBD Pupil-Negative ($p = .0049$); and Teacher-Negative and EBD Pupil-Negative ($p = .0258$).

For within group comparisons, four separate one-way ANOVAs with trial-type as the within participant variable were conducted (one for each group), in order to examine the trial-

type effects for each group. Trial-type was found to be significant for both the control group [$F(3, 19) = 6.49, p < .001, \eta_p^2 = .416$], and the In-Training teachers ($F(3, 19) = 2.91, p < .05, \eta_p^2 = .296$). Post hoc tests (Scheffe) indicated that the significant trial-type differences for both groups lay between Teacher-Positive and EBD Pupil-Positive in the Control group ($p < .001$) and the In-Training teachers ($p < .05$).

Sixteen separate one-group t-tests were also conducted to determine whether each of the IRAP effects differed significantly from zero for each group. For Teacher-Positive, the effects were significant for all four groups (all p 's $< .01$). For Teacher-Negative, the effects were significant for the three groups of teachers (all p 's $< .01$). For the EBD Pupil-Positive trial-type, the effect was significant only in the control group ($p < .05$), and no effects were significant for the EBD Pupil-Negative trial-type (all p 's $> .05$).

The ORM Scale

Prior to the exposure to the IRAP, the three groups of teachers were exposed to the ORM Scale. The demographic questionnaire was also presented to Primary and Post-Primary teachers in relation to the number of years they had been engaged in mainstream teaching. The total mean score for each group was calculated and the results indicated that Primary teachers had 10 years and 3 months mean experience – considerably less than the mean of 16 years and 5 months for the Post-Primary teachers. All other results of the ORM for each group on each of the sub-scales are presented in Table 1.

Table 1

The results of the ORM scale in Study 1.

ORM Scale		
Attitudes to Inclusion		
In-Training	Primary	Post-Primary

IMPLICIT ATTITUDES TOWARD PUPILS WITH EBD

Strongly Disagree/Disagree	-	-	-
Undecided	10%	20%	5%
Strongly Agree/Agree	90%	80%	95%

Emotional Reaction Scale 1

Reactions to the inclusion of EBD child in participant's classroom

	In-Training	Primary	Post-Primary
Extremely Negative/Negative	-	10%	15%
Neutral	30%	45%	25%
Positive/Extremely Positive	70%	45%	60%

Emotional Reaction Scale 2

Exclusion of child from other school to be present in participant's classroom

	In-Training	Primary	Post-Primary
Extremely Negative/Negative	25%	40%	35%
Neutral	25%	30%	40%
Positive/ Extremely Positive	50%	30%	25%

Willingness to Adapt Teaching Practice

	In-Training	Primary	Post-Primary
Strongly Disagree/ Disagree	5%	10%	10%
Undecided	45%	45%	65%
Agree/Strongly Agree	50%	45%	25%

On the Likert Scale assessing teachers' attitudes to the inclusion of pupils with EBD, all three groups were predominantly positive (see top row of Table 1), with 90% of the overall sample in favor. No-one explicitly indicated that they disagreed with inclusion, although approximately 10% (mostly Primary teachers) were undecided.

In spite of their positive attitudes to the principles of inclusion, all three groups of teachers showed more negative reactions to the possibility of having EBD pupils directly placed within their classrooms (second row of Table 1). Specifically, only around 55% were

in favor of inclusion in this context, 35% were neutral (mostly Primary teachers), and 10% were explicitly negative (included mostly both Primary and Post-Primary teachers).

Because teachers had been reticent when asked about the direct inclusion of an EBD child in their own classrooms, it was not surprising when they reported even greater negativity at the prospect of including a child with EBD who had previously been excluded from another educational facility (third row of Table 1). Indeed, only around 35% were positive about such a prospect, 25% were neutral, and as many as 40% were overtly negative (mostly Primary and Post-Primary teachers). Interestingly, when comparing responding to on the emotional reaction scales 1 and 2, the Post-Primary and Primary teachers were more negative about the inclusion of an excluded child from another school (scale 2) than about the inclusion of an EBD child (scale 1).

Teachers from both groups were unanimous in their requests for support within the classroom situation, including designated SEN and traditional classroom assistants, and resource teaching. Four other areas of support were identified as essential to the mainstream inclusion of this population. (1) Standard class sizes were deemed an impediment to the inclusion of more than one or two pupils with EBD in any one classroom. (2) At a professional level, a multidisciplinary approach was perceived appeared crucial for keeping teachers informed of a child's progress in other areas (i.e., behavioral therapy, medication, etc.), with particular emphasis placed on the need for relevant information *prior to* the child's introduction in a particular classroom. (3) At a more personal level, teachers stressed the need for support from closer colleagues, particularly school principals and parents. (4) In-service training was fundamental to meeting the pupils' academic needs because their learning difficulties impact upon their ability to cope in a mainstream classroom and on their behavior therein.

One other key issue was raised by practically all of the Post-Primary teachers regarding SEN inclusion at this level. These teachers expressed serious concerns about their physical safety, particularly with teenagers with EBD. In order to deal with this issue effectively, they identified a number of areas of critical support. (5) The physical presence of relevant others (especially SEN assistants) was central to managing disruptive behavior. (6) A whole school policy that governed disciplinary procedures for all students was essential and should be agreed by both parents and pupils *before* commencement at that school. (7) Behavioral support units were deemed to be beneficial to both teachers and students (e.g., in the provision of time-out facilities).

Only 40% of teachers indicated that they would be willing to adjust their teaching practices to facilitate inclusion of an EBD child, 50% were neutral and 10% were unwilling (bottom row of Table 1). The teachers who were neutral or negative were well dispersed across the three groups, hence it was perhaps most surprising that the In-Training teachers were no less willing than experienced teachers to adapt their teaching practices in this regard.

Summary and Discussion

Overall, the IRAP effects observed in Study 1 indicated that the three groups of teachers showed strong implicit bias toward teachers. Although their implicit attitudes to EBD Pupils were weaker, they were predictably negative. A somewhat different profile was observed with the control group -- although they indicated that teachers were positive and EBD Pupils were negative, they did not deny that teachers were negative, and they did confirm that EBD pupils were positive.

The outcomes on the explicit ORM Scale indicated that although teachers were generally in favor of the inclusion of EBD pupils into mainstream education, they were more reticent when asked about the placement of this population within their own classrooms. The Primary teachers were even more reticent when this inclusion involved a child who had been

previously excluded from another educational facility. Interestingly, all four groups (including the In-Training Teachers) expressed considerable unwillingness to adapt their teaching practices to foster such inclusion.

Taken together, the teachers showed considerably negative attitudes to pupils with EBD on both the implicit and explicit measure. Although the explicit measure specifically targeted inclusion, this offered a useful index of teachers' attitudes to this sample and how willing they would be to accommodate them within their direct educational environments. Although the control group did not complete the explicit measure, the IRAP showed a somewhat differentiated profile relative to teachers that was characterized by less negativity towards EBD pupils.

One issue that emerged from the findings from Study 1 concerned the possibility that what the IRAP was tapping into was not in fact the difference between the teachers' implicit attitudes to teachers relative to EBD pupils, but was simply the difference in attitudes to teachers relative to pupils *generally*. In other words, it remained possible that teachers may have held equally negative implicit attitudes toward typically-developing pupils as EBD pupils. Hence, the IRAP outcomes reported here could not be interpreted as having specific relevance to EBD pupils, but could be related to pupils more generally. Therefore, in order to rule out this possibility, assessing the attitudes toward a more generic contrast category of pupils was the focus of Study 2.

Study 2

Method

Participants

Forty adults participated voluntarily in this study. The participants were divided into two groups according to their levels and type of educational training and experience with pupils. The Primary Teachers ($N=20$) were all currently employed in Primary schools, had a

formal qualification in teaching, and had at least two years teaching experience in mainstream education. The Post-Primary Teachers ($N=20$) were currently employed in Post-Primary schools, had a formal qualification in teaching, and had at least two years teaching experience in mainstream education.

Materials

The study involved the same basic sets of materials/apparatus as the previous study. The stimuli employed for the IRAP were identical in format to the previous study, except that the sample stimuli in this case contained the words “Teacher” and “Pupil”.

Procedure

All aspects of the procedure were identical to the previous study, except that the explicit measure was presented to participants after they completed the IRAP. The four basic trial-types presented here were referred to as Teacher-Positive; Teacher-Negative; Pupil-Positive; and Pupil-Negative. Correct responses on consistent trials involved positivity toward “Teacher” and negativity towards “Pupil”, whereas correct responding on inconsistent trials was reversed (i.e., Teacher-Negative and Pupil-Positive).

Results

The IRAP

Responding indicated by the D_{IRAP} scores were very similar for both groups. Both responded as predicted on Teacher-Positive and Teacher-Negative, indicating a pro-teacher bias. Indeed, the Primary Teachers produced a particularly strong D_{IRAP} effect on the former relative to the Post-Primary Teachers. The groups were again consistent with each other in their responses to Pupil-Negative, indicating an anti-pupil bias, although the D -scores in both cases were very small. Unexpectedly, however, on Pupil-Positive both groups more readily responded with Pupil-Positive/Similar than Opposite, indicating a pro-pupil bias on this trial-type (see Figure 3).

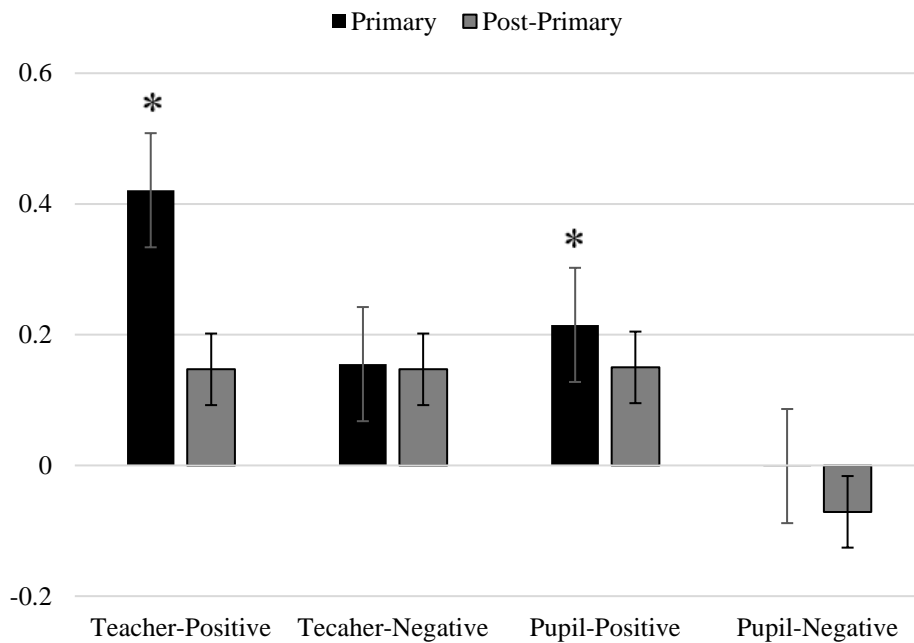


Figure 3. D_{IRAP} scores (and SE bars) for the four trial-types across the two groups of participants in Study 2. Significant effects are denoted by *.

For between group comparisons, the D_{IRAP} scores were entered into a 2x4 mixed repeated measures ANOVA, with group as the between participant variable and trial-type as the within participant variable. A significant main effect was recorded for trial-type, but not for group or the interaction effect (all p 's > .05). Post hoc tests (Scheffe) indicated significant differences for trial-type between Teacher-Positive and Pupil-Positive ($p < .0001$) and between Teacher-Negative and Pupil-Negative ($p < .05$).

Two one-way ANOVAs, one for each group, were also conducted. Trial-type was significant only for Primary Teachers ($p < .0001$). Post hoc tests (Scheffe) indicated that the significant differences for trial-type for this group lay between Teacher-Positive and Pupil-Positive ($p < .0001$), Teacher-Negative and Pupil-Negative ($p < .01$), and for Teacher-Negative and Pupil-Positive ($p < .05$).

Eight separate one-group t-tests (one per group) were also conducted to establish whether each of the D_{IRAP} scores for the four trial-types differed significantly from zero.

Teacher-Positive ($p < .0001$) and Pupil-Positive ($p < .05$) were both significant, but only for the Primary Teachers ($p < .0001$).

Taken together, these findings indicated that there were some differences between the Primary and Post-Primary Teachers' attitudes to teachers and pupils. The Primary teachers showed particularly strong positivity towards teachers that was not shared to the same extent by the Post-Primary teachers. In contrast, the teachers' attitudes to pupils were mixed when they confirmed that pupils were positive but also confirmed that pupils were negative, although the latter effect was very small.

The ORM Scale

The explicit measure also produced some interesting findings. In terms of years' experience, the two groups of teachers had extensive teaching experience, with a mean of 20 years recorded for the Primary Teachers and 16 years/6 months for the Post-Primary teachers. All other results of each of the three ORM sub-scales for both groups are presented in Table 2.

Table 2

The Results of the ORM Scale in Study 2.

ORM Scale		
Attitudes to Inclusion		
	Primary	Post-Primary
Strongly Disagree/Disagree	-	-
Undecided	10%	20%
Agree/Strongly Agree	90%	80%
Emotional Reaction Scale 1		
<i>Measured reactions to the inclusion of EBD child in participant's classroom</i>		
	Primary	Post-Primary

IMPLICIT ATTITUDES TOWARD PUPILS WITH EBD

Extremely Negative/Negative	30%	10%
Neutral	55%	65%
Positive/Extremely Positive	15%	25%

Emotional Reaction Scale 2

Exclusion of child from other school to be present in participant's own classroom

	Primary	Post-Primary
Extremely Negative/Negative	65%	55%
Neutral	30%	40%
Positive/Extremely Positive	5%	5%

Willingness to Adapt Teaching Practice

	Primary	Post-Primary
Strongly Disagree/Disagree	10%	-
Undecided	60%	70%
Agree/Strongly Agree	30%	30%

Over 80% of both groups of teachers were positive about the general concept of inclusion (top row of Table 2). No-one explicitly indicated that they disagreed, although approximately 15% of the total sample (mostly Post-Primary Teachers) was undecided. However, in spite of their positive attitudes to the principle of inclusion, both groups of teachers reacted more negatively to the possibility of having EBD pupils directly placed within their classrooms (second row of Table 2). Specifically, only around 20% of the total sample, were in favor of inclusion in this context, 60% were neutral (mostly Post-Primary) and 20% were negative. Furthermore, even greater negativity was expressed when both groups were asked about the prospect of including a child with EBD who had previously been

excluded from another educational facility (third row of Table 2). Indeed, only around 5% of the sample was positive, 35% were neutral, and 60% were negative.

As in the previous study, teachers from both groups were unanimous in their requests for support within the classroom situation, including designated SEN and traditional classroom assistants, and resource teaching. The areas identified in the previous study were also highlighted here, with the areas of support being highlighted as (1) reduction of class sizes; (2) the establishment of a multidisciplinary approach; (3) The necessity of developing a whole-school approach in dealing with school discipline problems in relation to pupils with EBD; (4) The opportunity to meet with the students in question (5) The establishment of an effective counselling service for both students and their families, while In-service training was also implicated as being fundamental to meeting the pupils' needs. Across the two groups, 30% of teachers indicated that they would be willing to adjust their teaching practices to facilitate this type of inclusion, 65% were neutral and only 5% were unwilling (bottom row of Table 2).

Summary and Discussion

Overall, the IRAP effects observed in Study 2 indicated that Primary and Post-Primary teachers showed implicit bias toward teachers, although this effect was much stronger for the former relative to the latter. The IRAP also indicated mixed attitudes toward pupils, where both groups confirmed that they were positive, but the Post-Primary teachers also agreed that they were negative. The outcomes on the ORM Scale indicated that although these teachers were generally in favor of the inclusion of EBD pupils into mainstream education, they were more reticent when asked about the placement of this population within their own classrooms. Both groups were between willing and neutral in terms of the adaptation of their teaching practices.

Post-hoc Comparison between Study 1 and Study 2

The primary aim of Study 2 was to determine whether similar IRAP outcomes would be recorded with “Pupil” and “EBD Pupil”, when each was compared with “Teachers”. In Study 1, all three groups of teachers showed strong implicit bias toward “Teacher” and weaker negative attitudes to “EBD Pupil”. Interestingly, the control group of non-teachers had more mixed reactions to both types of sample stimulus. Although the teachers who participated in Study 2 showed equally strong positive biases toward “Teacher” as recorded in Study 1, they had mixed reactions toward “Pupil”. The difference, therefore, between the two studies indicated that teachers had more negative reactions to “EBD Pupil” than to “Pupil”. As a result, it is reasonable to conclude that the EBD outcomes recorded in Study 1 did not solely result from teachers’ generic attitudes to pupils, but were specific (at least to some extent) to EBD. For illustrative purposes, see Figure 4 where the EBD pupil and Pupil trial-types are grouped for each group of teachers across the two studies. In order to determine whether the differences in the teachers’ implicit attitudes to “Pupil” versus “EBD Pupil” were statistically significant, the D_{IRAP} scores from both studies were entered into two separate one-way ANOVA’s – one for each group of teachers, with the D-scores grouped by sample (i.e., “Pupil” versus “EBD Pupil”). There was a highly significant difference between the two samples for the Primary teachers [$F(1, 19) = 4.473, p < .01, \eta_p^2 = .385$], but this difference was not significant for the Post-Primary teachers ($p > .05$), indicating greater negativity towards “EBD Pupil” greater positive toward “Pupil” among the Primary teachers.

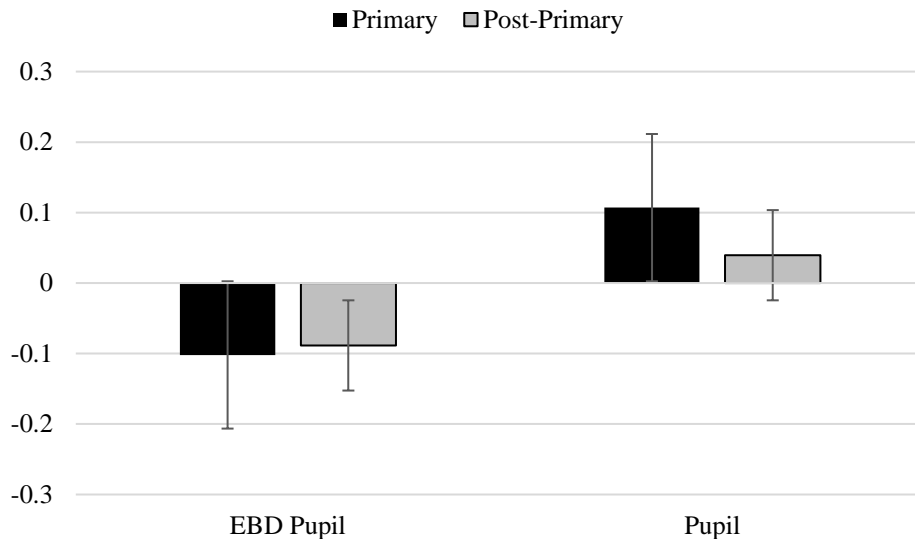


Figure 4. Pupil and EBD Pupil trial-types (grouped) for the Primary and Post-Primary teachers across Study 1 and Study 2.

General Discussion

The current set of studies used the IRAP to examine teachers' implicit attitudes to pupils with EBD. Study 1 investigated this across various sub-groups of teachers with different levels of teaching experience in order to determine whether there was a relationship between implicit attitudes to Teacher/EBD pupil and level of teaching experience. The results demonstrated that the three groups of teachers showed strong positivity toward teachers, but showed negativity toward EBD pupils. Conversely, the pattern of IRAP effects observed among the control group indicated less negativity toward EBD pupils than teachers, suggesting that such biases are unique to teaching experience. Further negative patterns were also observed on the ORM Scale. Overall, teachers were in favor of the inclusion of EBD pupils into mainstream education, however, when asked about the inclusion of EBD pupils in their own classes, they appeared reticent, and even more so when this inclusion involved a child who had been previously excluded from another class. Perhaps surprisingly, no teachers expressed willingness to adapt their teaching practices to foster such inclusion.

Given the findings of Study 1, it remained possible that the effects observed were not specific to EBD pupils, but to pupils more generally. Study 2 therefore examined teachers' attitudes to pupils in general using a more generic contrast category. Although the teachers in Study 2 showed the same positivity toward teachers as recorded in Study 1, they had mixed reactions toward pupils. The difference therefore between the two studies indicated that teachers had greater negativity toward EBD pupils than to pupils generally, with greater negativity among the Primary teachers.

At this point, it is also important to emphasize that among all of the groups in Study 1, and also the Primary teachers in Study 2, a specific trial-type effect emerged that has been reported in recent IRAP research. The effect is known as the *single trial-type dominance effect* (STTDE) because the size of the IRAP effect for one trial-type appears to dominate over the other three trial-types. The Differential Arbitrarily Applicable Relational Responding Effects (DAARRE) model has been used to explain the STTDE (see Finn, Barnes-Holmes, & McEntegart, 2018). The DAARRE model is based on the assumption that such differential trial-type effects may be explained by the interaction between the functional properties of the individual stimuli (e.g., the extent to which they evoke appetitive or aversive reactions) and the relational properties between the stimuli (i.e., the extent to which they are similar or different) and the response options.

In Study 1, the sample stimulus "Teacher" likely possessed positive functional properties relative to the sample "EBD Pupil". Similarly, the positive target stimuli (e.g., "accommodating") may have possessed positive functional properties relative to the negative target stimuli (e.g., "angry"). In a typical sample, one would expect the sample "Teacher" to cohere more strongly with positive stimuli than negative stimuli, and the sample "EBD Pupil" to cohere more strongly with negative stimuli than positive stimuli. Thus, for example, a Teacher-Positive relation is coherent, whereas a Teacher-Negative relation is incoherent.

More informally, a teacher would find it very easy to select “Similar” in the context of Teacher-Positive, but quite difficult to select “Different”. For the other three trial-types, however, this contrast would be reduced. In Study 2, however, the STTDE was observed among the Primary teachers, but not the Post-Primary teachers. This suggests that the sample stimulus “Teacher” did not possess positive functional properties relative to the sample “Pupil” for the Post-primary teachers, leading to a dominance of the relational properties of the task over the functional properties, leading to more flat effects.

Overall, and consistent with previous studies, the data from the two studies above supports the presence of teachers’ greater negative attitudes toward pupils with EBD, when compared to typically-developing pupils (see also Hein, Grumm, and Fingerle 2011; Kelly and Barnes-Holmes, 2013). Due to the relationship between such attitudes and effective inclusion, future research could investigate the effectiveness of using interventions, similar to those employed in Scanlon and Barnes-Holmes (2013), to reduce the negativity toward pupils with EBD and could use the IRAP as a precise measure of change of these implicit and explicit attitudes. Indeed, the current findings also have potential implications for the educational experience of pupils with EBD and SEN more generally, in terms of academic and social behavior, perceptions of self-efficacy, and even access to services. Providing additional support and interventions for teachers may help to reduce such negative attitudes and circumvent potential negative learning experiences for pupils with SEN.

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