

# **Teacher Self-Efficacy of Primary School Teachers working in Irish ASD classes.**

## **Abstract**

This study investigated the perceived Teacher Self-Efficacy (TSE) of primary school teachers in Ireland who are working in special classes for students with autism. Furthermore, it sought to examine whether these perceptions of TSE were related to special class teaching experience, their engagement in professional development pertaining to autism, and their perceptions of principals' instructional support. An online questionnaire was administered to 139 of these teachers. The findings indicated that participants had a relatively high sense of TSE. Correlation analyses identified statistically significant, positive correlations between the three independent variables and the dependent variable of TSE.

## **Keywords**

Teacher self-efficacy; Autism education; Teacher experience; Professional development; Leadership support; ASSET

## **Introduction**

In the Republic of Ireland, the needs of students with autism are met on a continuum of support, ranging from full mainstream inclusion, to home tuition (Daly et al., 2016). In mainstream schools, standalone Autism Spectrum Disorder (ASD) classes form an important part of this continuum. These classes enable students with more complex needs to attend their local mainstream school (National Council for Special Education [NCSE], 2016). They have a maximum pupil-teacher ratio of 6:1, and classrooms are resourced with a minimum of two

Special Needs Assistants to support the care needs of the pupils enrolled. Admission into an ASD class requires a professional report and is only considered where it has been demonstrated that the student cannot learn effectively in a mainstream classroom for most (or all) of the school day, even when provided with additional supports (NCSE, 2016). Currently, there are 997 ASD classes in primary schools in Ireland (NCSE, 2020), and the demand for places within these classes exceeds supply (Department of Education and Skills [DES], 2020). As this form of provision grows, the importance of recruiting and retaining confident and competent ASD class teachers increases in tandem. In general education settings, one such factor that has been found to positively affect classroom praxis is Teacher Self-Efficacy (TSE) (Klassen, Tze, Betts, & Gordon, 2011). As such, the present study aims to investigate factors that influence the TSE of ASD class teachers.

### **Teacher self-efficacy**

TSE has been conceptualised as the teacher's belief that they have the skills required to facilitate the learning of their students (Guskey & Passaro, 1994; Klassen et al., 2011; Ruble, Toland, Birdwhistell, McGrew, & Usher, 2013). While it must be noted that TSE is only one aspect affecting a teacher's performance in the classroom (Armor et al., 1976), the literature has identified several key implications for the student linked to teachers' perceptions of TSE. Teachers with high TSE tend to work on the understanding that social and external influences on students' educational achievement can be overcome by adapting methodologies, and by expending additional effort on teaching these students (Bandura, 1997; Gibson & Dembo, 1985). These teachers have been found to engage more positively with their students (Gibson & Dembo, 1985; Woolfolk & Hoy, 1990), to implement a greater range of instructional and emotional supports (Ryan, Kuusinen, & Bedoya-Skoog, 2015), and to better support students' ability to socialise with peers (Almog & Shechtman, 2007). Teachers with high TSE have

been noted to have better classroom management skills (Ryan et al., 2015) and are often more organised, and enthusiastic about teaching (Allinder, 1994). Although some researchers have identified a positive correlation between improved student outcomes and elevated TSE (Klassen & Tze, 2014), the meta-analysis conducted by Klassen, et al. (2011) found that only 2.8% of studies on TSE conducted between 1998 and 2009 actually investigated this correlation, and thus the connection to student outcomes must be interpreted with caution. With regards the teacher, high TSE has been found to mitigate against burnout (Bandura, 1997; Friedman, 2003; Ruble, Usher, & McGrew, 2011; Ruble et al., 2013; Wang, Hall, & Rahimi, 2015), to align with higher levels of job satisfaction (Skaalvik & Skaalvik, 2010; Wang et al., 2015), greater levels of commitment to teaching (Chesnut & Burley, 2015) and lower levels of stress (Ruble et al., 2013; Schwerdtfeger, Konermann, & Schönhofen, 2008).

### ***Factors affecting TSE***

Researchers have identified several variables that relate to the self-efficacy of the teacher, including teacher specific, and school context differences (Hoy & Woolfolk, 1993). Many of these works have based their hypotheses on Bandura's social cognitive theory (e.g. Bandura, 1977; Bandura, 2012), whereby perceptions of self-efficacy are believed to be shaped by mastery experiences, vicarious experience, verbal persuasion, and physiological and affective states. For the purposes of this study, mastery experience, vicarious experience and verbal persuasion are examined.

Mastery experiences refer to the experience of successfully engaging in a task. This is considered to be the strongest of the four sources of efficacy expectations, as they provide the most reliable feedback as to whether or not a person can complete a task (Bandura, 1977; Bandura, 1997). Studies in the mainstream context have indicated a positive correlation

between teaching experience and TSE (Hoy & Woolfolk, 1993; Fackler & Malmberg, 2016; Wolters & Daugherty, 2007). Similarly, prior experience of teaching students with special educational needs (SEN) has been found to positively correlate with TSE for inclusive practices (Malinen, Savolainen, & Xu, 2012; Malinen et al., 2013; Ekins, Savolainen, & Engelbrecht, 2016), though this relationship was not found by Yada and Savolainen (2017). Within the context of special schools, teachers with more than five years of experience had significantly higher TSE than their less experienced colleagues (Shaukat, Vishnumolakala, & Bustami, 2019). Interestingly, no conclusive correlation has been identified between years' experience and TSE for the teaching students with autism (Ruble et al., 2011; Corona, Christodulu, & Rinaldi, 2017). This could perhaps be explained by the heterogeneity of educational needs presented by students with autism.

Vicarious experience occurs when a model is observed to have successfully performed an action. In Ireland, many teachers access vicarious experience through engagement with continuous professional development (CPD). A 2016 review counted 201 courses available to support teachers of students with SEN in Ireland, 81 of these were specific to autism education. Funded, graduate level courses are also available in seven Irish universities (Duggan, 2016).

In relation to autism education, Jennet, Harris and Mesibov (2003) observed a positive correlation between teachers' commitment to a teaching philosophy and TSE. This suggests that the greater the understanding a teacher has of a methodology, the greater the potential impact on TSE. A positive correlation between CPD in autism education and behavioural management, and TSE has also been identified (Corona, et al., 2017; Horan & Merrigan, 2019). Similar patterns of correlation have been identified with regards to TSE for inclusive practices in mainstream settings (Chao, Sze, Chow, Forlin, & Ho, 2017; Ekins et al., 2015;

Sharma & Sokal, 2015). The format of the CPD has impact on TSE development. Leyser, Zeiger and Romi (2011) observed that short (two to three credit) courses, that do not contain an element of mastery experience, are insufficient to change attitudes towards inclusive education. It has also been observed that CPD for inclusive practices is most effective when it focuses on areas that teachers feel least confident in (Lai, Li, Ji, Wong, & Lo, 2016).

Verbal persuasion serves as a third mode by which TSE can be affected. When people are verbally persuaded that they can complete an activity, they are more likely to exert more effort and to persist at a task. Within the context of schools, verbal persuasion may be perceived as feedback from colleagues, supervisors, and administrative staff (Bandura, 1997), however, the research to date on TSE has largely overlooked the influence of school leadership on TSE (Fackler & Malmberg, 2016). Notwithstanding this, three studies were identified that investigated the correlation between the variables of TSE and instructional support in the context of autism education (Accardo, Finnegan, Gulkus, & Papay, 2017; Anglim, Prendeville, & Kinsella, 2018; Ruble, et al., 2011).

In Ireland, qualitative research observed that mainstream teachers felt that their TSE to meet the needs of students with autism in their class was mediated by the support they received within the school (Anglim et al., 2018). Similarly, Accardo, et al. (2017) identified a correlation between TSE for teaching reading to students with autism, and perceptions of administrative support. Ruble, et al. (2011), however, did not find a correlation between these two variables. This may perhaps be because ASD teachers may not rely on verbal support from administrators in the same way as their mainstream colleagues, as their administrators may not necessarily have the specialised experience required to offer support (Ruble, et al., 2011). This suggestion gains significance when considered alongside the positive correlation previously detected between TSE and the principal's level of work experience (Fackler &

Malmberg, 2016), while supporting Bandura's theory that verbal persuasion is most effective when provided by more competent models (Bandura, 1997).

### *Autism and TSE, the Irish context*

Banks, et al. (2016) identified several trends relating to the efficacy of Irish teachers to teach in specialist settings in a study that included the opinions of five ASD class teachers. Participants frequently expressed that they undertook the role of special class teacher without a clear understanding of what their role would entail, and that they would have appreciated greater levels of preparation prior to entering the special class. Although participants were aware of the importance of CPD, it was frequently expressed that they did not feel confident in their ability to meet the needs of their students. Two Irish studies have specifically focused on TSE and autism education. Anglim, Prendeville and Kinsella (2018), used a qualitative approach to investigate the TSE of primary teachers to support the inclusion of children with autism in mainstream classes. Their investigation found that four of the six participants reported feeling ill-equipped to teach a student with autism, and five of the teachers reported uncertainty in their ability to manage the student's behaviour. All six reported improved TSE as the academic year progressed. With regards ASD class teachers, Horan and Merrigan (2019) used the Teacher Efficacy for Inclusive Practices scale (Sharma, Loreman, & Forlin, 2012) to assess the TSE of Irish ASD class teachers. Although limited by a small sample size, this study revealed a statistically significant difference in perceived TSE for those with "little or no training" compared to highly trained colleagues. Furthermore, interviews conducted with seven participants revealed positive attitudes towards CPD, and thematic analysis suggested that CPD was felt to improve perceptions of TSE.

Most recently, the DES evaluated practices in 65 primary ASD classes. This evaluation found that teachers had very good, or good subject knowledge, pedagogical knowledge, and

classroom management skills in 83% of classrooms (DES, 2020). Qualitatively, inspectors observed a correlation between teachers' experience of ASD class teaching and their engagement with appropriate CPD, and their pedagogical knowledge. The report expressed concern that autism-specific assessments were not used to inform planning in 38% of cases and recommended the provision of CPD in this area. This report made specific recommendations that school leaders prioritise the deployment of experienced, skilled teachers to ASD classes, and that a whole-school approach to accessing and auditing participation in autism specific CPD be completed in all schools operating ASD classes.

### **The Present Study**

This study measured perceptions of TSE among ASD class teachers in Ireland and investigated how TSE is affected by three independent variables. Years' special class teaching experience was used as a proxy for mastery experience, engagement with CPD pertaining to autism was used as a proxy for vicarious experience, and perceptions of principals' instructional support served as a proxy for verbal persuasion. The overarching research questions guiding the present study were:

1. What is the TSE of ASD class teachers in Ireland?
2. Is there a relationship between TSE and three independent variables, namely: special class teaching experience, engagement with CPD pertaining to autism and principals' instructional support?

### *Data collection*

Data were collected through a self-completion online questionnaire. The questionnaire was developed using a combination of questions from pre-validated questionnaires (Goddard, Neumerski, Goddard, Salloum, & Berebitsky, 2010; Ruble et al., 2013) and researcher-designed questions. As specificity is central to any measure of TSE (Enochs & Riggs, 1990; Tschannen-Moran & Hoy, 2001), The ASSET (The Autism Self-Efficacy Scale for Teachers) (Ruble et al., 2013), a scale developed specifically to measure the TSE of those who work with students with autism, was selected for use in this study. Although the preliminary investigation into the ASSET's rigour was limited by the small sample size (N=44), the ASSET provides researchers observing the construct of TSE for in ASD settings with a context-specific scale. As this scale has only appeared once in literature beyond the initial study (Corona et al., 2017), it was hoped that the use of this scale would support the generalisability of findings from the ASSET, and any future research projects using the ASSET. Minor semantic edits were made to the scale to add clarity to the 30 questions, and to make the questions more contextually appropriate to ASD class teachers in Ireland.

In addition to the ASSET items, the first research variable, "years' special class teaching experience" was measured using a multiple-choice question. The second research variable, "engagement with CPD pertaining to autism" was measured using a checkbox demographic question informed by the NCSE's CPD Database (Duggan, 2016). The third research variable, "perceptions of principals' instructional support" was measured using a short, pre-validated scale (Goddard, et al., 2010). This three-item scale was originally administered to 616 elementary school teachers in the United States to measure the relationship between teachers' perceptions that instruction is differentiated within their schools, and perceptions of principals' instructional support. Although acknowledged by the



researchers that these three questions do not measure every way in which principals support instructional decision-making, the items in the sub-scale are conceptually akin to those that appear in the literature on instructional and transformational leadership (Goddard et al., 2010). This sub-scale consisted of three five-point Likert-style questions that ranged from (1) strongly disagree, to (5) strongly agree. The three items in the sub-scale were:

1. My principal helps me with my instructional practices.
2. I feel comfortable discussing instructional issues with my principal.
3. The principal empowers me to make decisions that improve teaching and learning.

A colleague, who had extensive experience of both ASD class teaching, and of conducting research within this field, was invited to pilot the all aspects of the questionnaire. Feedback from this process influenced the design and content of the questions. At this point, the response options on the ASSET scale were reduced from a 100-point scale to a 6-point scale. The ASSET, as originally administered by Ruble et al. (2013) required teachers to answer items that reflect their perceived self-efficacy to teach students with autism on a 100-point rating scale. It was acknowledged in the discussion of their findings, that respondents did not use the full 100-point rating scale. As few participants used values below 50, the researchers collapsed the scores between 0-50 into zero. They also collapsed the values between decades (51-60 = 1, 61-70=2, and so forth) owing to the tendency of respondents to score themselves using decade values. The 1-6 Likert-style scale was found to be of equal reliability as the 0-100 scale (Ruble et al., 2013). The research was approved by the Research Ethics Board of Dublin City University.

## ***Participants***

The study population comprised of ASD class teachers working in mainstream primary schools in Ireland. 744 ASD classes located within 392 mainstream primary schools were identified through a database available on the NCSE website (NCSE, 2018). Using the margin of error calculator on the SurveyMonkey.com website, it was decided to aim to recruit at least 135 of these 744 ASD class teachers to achieve a confidence level of 80%, and a margin of error of 5% (SurveyMonkey Inc., 2018). To achieve this sample size, systematic sampling was used. To decide the frequency of the systematic sampling method, a frequency interval of every fifth school that operated an ASD class was used, based on the equation:  $f = N/ns$ , whereby  $f$  = frequency interval,  $N$  = the total number of the population of ASD class teachers, and  $ns$  = the required number in the sample (Cohen, Manion, & Morrison, 2007). This sampling method facilitated the equal representation of different geographical areas within the sample as the NCSE database sorts classes according to county. A reminder email was sent to participants that did not engage with the questionnaire seven days after the initial invitation. This recruitment process was repeated a further two times. Of the 662 ASD class teachers who were invited to participate in this study, 153 responses were received. Uncompleted questionnaires were not included in the dataset for analysis, as such, the dataset for this research study were based on the 139 completed questionnaires.

## ***Data analysis***

The dataset was manually inputted into Statistical Package for Social Sciences (SPSS) Version 24 using single-transfer coding and “cleaned” for errors made during the inputting process. Frequency analysis on each of the variables was conducted, to highlight any unusual

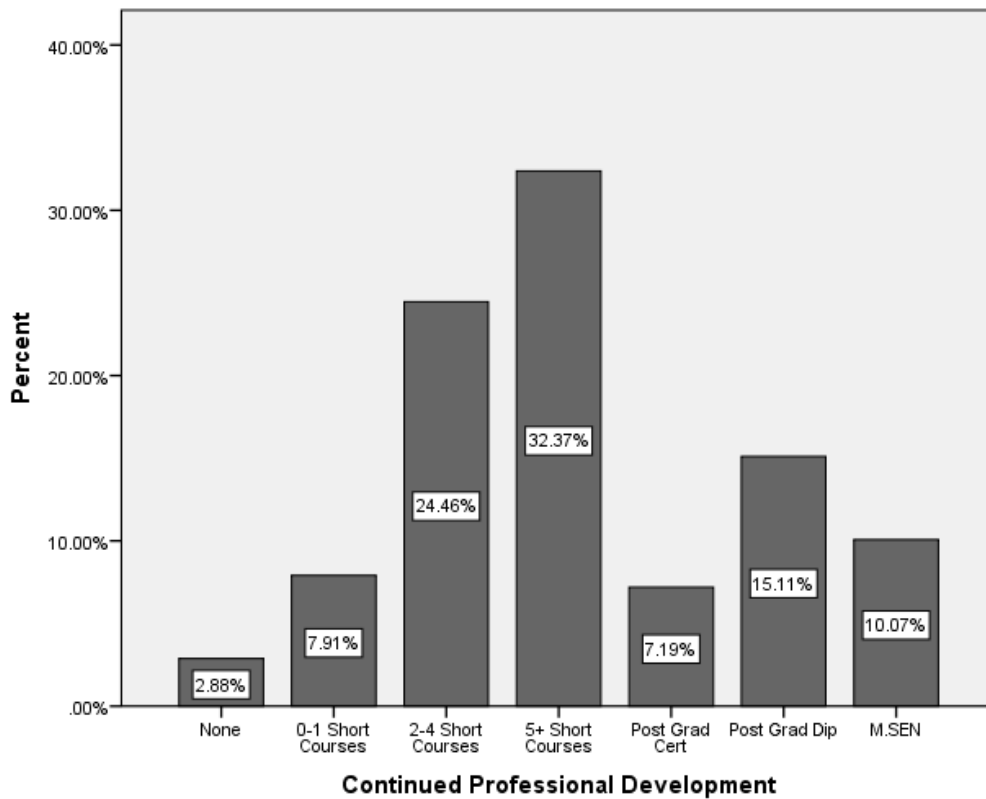
codes. The Spearman's Rho Correlation Coefficient test was used for correlational analysis, as the data did not meet the required assumptions for parametric testing.

### ***Instrument validation***

To test the ASSET for internal consistency, Cronbach's alpha was computed. As the resulting alpha coefficient was  $>0.90$  ( $\alpha = .971$ ), the questionnaire can be considered very highly reliable (Kline, 2000). This is close to the  $\alpha = .96$  found by the authors of the ASSET scale (Ruble et al., 2013), and the researchers Corona et al. (2017) who obtained a Cronbach's alpha value of .978. The alpha coefficient for the Principal's Support for Instruction sub-scale was .832, and so the questionnaire can be considered highly reliable. An alpha coefficient of .83 was found for the original scale authored by Goddard et al. (2010). Although reliabilities more than .9 are considered excellent, this reliability score is greater than the minimum score of .7 required for a good test (Kline, 2000).

### **Results**

Frequency analysis of the independent variable "years' special class teaching experience" indicated that 48.20% of the dataset had 0-2 years' experience, 26.62% had 3-5 years' experience, 6.47% of the dataset had 6-8 years' experience, and 18.71% had more than nine years' experience. Respondents were asked to indicate their level of engagement with CPD and were presented with 9 categories, ranging from "none" to PhD level. Engagement with CPD pertaining to autism ranged from no engagement (2.88%) to Masters level (10.07%) (figure 1). The mode engagement with CPD pertaining to autism for this population was 5+ short courses (32.37%).



*Figure 1* Engagement in CPD pertaining to autism.

Participants were asked to rate their perceptions of their principal's support for instruction in three domains: support for instructional practices, support for instructional issues, and support for decision making (table 1). To calculate a total score for perception of support, the ordinal values on this scale (0=strongly disagree to 4=strongly agree) were added where the maximum possible score (indicating strong agreement for principal support across all three domains) would equal 12. The mean total score for perception of principals' support was 8.27, suggesting positive perceptions of instructional support overall. It is interesting, however, that the values range from 0 to 12. This indicates that there is a high degree of variance between participants regarding their perceptions of principals' instructional support. A total was also possible for each of the sub domains (total maximum = 4). Participants' perceptions of support for instructional decision making were highest with a mean score of

3.10, followed by support for instructional issues ( $\bar{x} = 2.95$ ). However, perceptions of support for instructional practices had a mean score of 2.22, just over the neutral midpoint (2).

<b>Descriptive Statistics for Principal's Support for Instruction Sub-Scale</b>					
0 = strongly disagree 1 = disagree 2 = neutral 3 = agree 4 = strongly agree	0 <i>Strongly disagree</i>	1 <i>Disagree</i>	2 <i>Neutral</i>	3 <i>Agree</i>	4 <i>Strongly agree</i>
Instructional support (instructional practices)	15.11%	12.95%	25.90%	27.34%	18.71%
Instructional support (instructional issues)	4.32%	5.04%	21.58%	29.50%	39.57%
Instructional support (decision making)	4.32%	5.04%	14.39%	28.78%	47.48%

*Table 1* Descriptive statistics for Principal's Support for Instruction sub-scale

### ***What is the TSE of ASD class teachers in Ireland?***

As directed by the authors of the ASSET (Ruble et al., 2013), the mean scores across the 30 ASSET items were calculated, with higher mean scores (maximum of 6) reflecting higher perceptions of TSE. The mean ASSET score for the sample was 4.38 (SD = .892) and scores ranged from 1.13 to 6. The standard error for the mean was .076. In this case, the 95% confidence intervals for the ASSET mean scores are within the range 4.23 to 4.52. The Kolmogorov-Smirnov (KS) test was used to formally test the distribution of the ASSET scores and they were found to be normally distributed ( $D(139) = .065, p = .200$ ).

Descriptive statistics were obtained for each of the thirty individual items on the ASSET scale (table 2). This process indicated that the three items within the ASSET that produced the highest mean scores were “use visual supports to increase your students' independence” ( $\bar{x} =$

5.20), “describe your students' characteristics that relate to autism” ( $\bar{x} = 5.00$ ), and “communicate and work effectively with your students' parent(s) or caregiver(s)” ( $\bar{x} = 4.98$ ). Conversely, the three items that yielded the lowest mean scores were “train peer models to improve the social skills of your students” ( $\bar{x} = 3.45$ ), “teach your students play skills” ( $\bar{x} = 3.91$ ), and “translate assessment information into teaching goals and objectives for your students” ( $\bar{x} = 3.94$ ). The item with the largest level of variance was “train peer models to improve the social skills of your students” ( $s^2 = 2.02$ ).

<b>Descriptive Statistics for Individual ASSET Items</b>				
	Min.	Max.	Mean	Std. Deviation
TSE visual supports	1	6	5.20	.926
TSE student characteristics	1	6	5.00	1.103
TSE communicate with caregiver	1	6	4.98	1.119
TSE communication opportunities	1	6	4.90	1.002
TSE classroom organisation	1	6	4.78	1.196
TSE feel success	1	6	4.78	1.068
TSE teaching activities	1	6	4.64	1.210
TSE describe parental priorities	1	6	4.62	1.194
TSE implement positive behaviour supports	1	6	4.58	1.116
TSE design positive behaviour supports	1	6	4.54	1.131
TSE describe parental concerns	1	6	4.53	1.175
TSE ASD interventions	1	6	4.47	1.144
TSE motivate	1	6	4.45	1.124
TSE academic skills	1	6	4.40	1.214
TSE teaching plan	1	6	4.39	1.271
TSE challenging behaviour	1	6	4.39	1.152
TSE student engagement	1	6	4.32	1.036
TSE objectives	1	6	4.32	1.346
TSE student attention	1	6	4.25	1.123
TSE assessment	1	6	4.14	1.376
TSE assess social interaction	1	6	4.09	1.213
TSE understood by others	0	6	4.06	1.395
TSE collect data	1	6	4.06	1.278
TSE build understanding	1	6	4.05	1.276
TSE assess play skills	1	6	4.01	1.313

TSE use data	1	6	4.01	1.305
TSE teach social interaction	1	6	4.00	1.263
TSE assessment information	0	6	3.94	1.350
TSE teach play skills	1	6	3.91	1.236
TSE train peer models	1	6	3.45	1.420

*Table 2* Descriptive statistics for individual ASSET items

***Is there a relationship between TSE and three independent variables, namely: special class teaching experience, engagement with CPD pertaining to autism and principals' instructional support?***

A Spearman's rho correlation coefficient test revealed a medium-sized positive correlation between years of special class teaching experience and ASSET mean scores ( $r_s = .33, p < .000$ ). A one-tailed Spearman's Correlation Test was used to test the correlation between engagement with CPD pertaining to autism, and ASSET mean scores. A weak positive correlation ( $r_s = .22, p = .005$ ) was found between engagement with CPD and ASSET mean scores. A two-tailed Spearman's correlation coefficient test indicated that there was a weak positive correlation between ASSET mean scores and perceptions of principals' instructional support ( $r_s = .26, p = .002$ ).

## **Discussion**

Within the present study, the mean ASSET score of 4.38 indicates that the study participants can be considered relatively confident within their roles. Notwithstanding the large degree of variance within the sample, the data were negatively skewed towards the lower mean scores. As TSE has previously been linked with a range of positive classroom praxis, and protective factors for the teacher, this is an encouraging finding. Furthermore, analyses of the individual

ASSET items highlight the aspects of ASD class teaching that command the highest levels of TSE. As this study appears to be the first to quantitatively investigate how confident ASD class teachers feel about individual aspects of their role, these results have the potential to provide policy makers and CPD providers with the information to ensure that CPD provision aligns with the training needs of ASD class teachers, thus fulfilling repeated calls for an investigation into the training needs of Irish teachers children with autism (Bond, Symes, Hebron, Humphrey, & Morewood, 2016; Parsons et al., 2009).

Within the context of autism education, the results contribute to the previously inconsistent findings relating to the relationship between mastery experience and perceptions of TSE. The present study provides empirical evidence supporting the importance of recruiting and allocating experienced teachers to the ASD class setting. Research in Ireland indicates that principals are aware of the importance of allocating qualified and experienced teachers to work in the ASD class (Banks et al., 2016; Daly, et al., 2016), however, principals have also reported difficulties recruiting staff with the desired qualifications and experience to work in special class settings (Daly et al., 2016). This difficulty is reflected in the findings of Horan and Merrigan (2019), who found that approximately half of participants were assigned to the ASD class based on interest or experience in autism, while the other half were appointed as newly qualified teachers. Qualitative research in Ireland has also found that schools vary in how they assign teachers to special classes (Daly et al., 2016). Although previous studies in Ireland have identified that both teachers and principals place a high value on the rotation of staff within, and out of the ASD class (Banks et al., 2016; Daly et al., 2016), when it is considered that 25.18% of participants within the present study have six or more years' experience of special class teaching indicates, it is clear that there is a degree of dissonance between aspiration and practice in relation to staff rotation. It must also be noted that, although the rotation of staff is important for building capacity within schools, it is



important that schools employ clear and consistent policies in relation to this practice to support the educational provision for students with autism (Banks et al., 2016). On the one hand, rotating teachers helps disseminate knowledge and experience gained in the ASD class throughout the school, on the other hand, the present findings suggest that it is worth questioning the benefit of staff rotation within this context. As years' special class teaching experience positively impacts on perceptions of TSE, it could be argued that the development of a core team of autism "experts" within a school would be of greater benefit to the advancement of ASD classroom praxis.

The positive correlation identified between the level of engagement with CPD pertaining to autism and perceptions of TSE is in keeping with previous research within the context of autism education (Corona et al., 2017; Horan & Merrigan 2019; Jennet et al., 2003). It also reflects positively on the quality of CPD provision in Ireland and supports previous research which have praised both the breadth (Duggan, 2016), and the quality (Banks, et al., 2016) of CPD provision for special education in Ireland. Considering the (albeit weak) positive correlation found between CPD and TSE in the present study, it is worth revisiting the recommendation that strategic CPD frameworks for all teachers of students with autism be developed (Bond et al., 2016; Daly et al., 2016). When it is considered that almost half of the present sample are in their first or second year of ASD class teaching, the findings of the present study also support previous calls to improve access to CPD for teachers prior to their transition into an ASD class (Banks et al., 2016). Indeed, access to vicarious experience in autism teaching methodologies could help address the concern around teacher allocation and recruitment (Daly et al., 2016).

In the present study, it was found that TSE positively correlated with the amount of instructional support teachers receive from their principals. This finding has the potential to influence the professional development of principals, particularly, when the high levels of

variance amongst responses to the Principals' Support for Instruction sub-scale are considered. As such, three suggestions could be made that have the potential to improve principals' capacity to support the instructional practice of the ASD class teacher. First, improved access to CPD relating to autism education would better position the principal to verbally support the ASD class teacher. Although most principals interviewed during a review of educational provision for students with autism in Ireland demonstrated a good understanding of autism, responsibility for developing professional competence pertaining to autism education was generally entrusted to the ASD class teacher (Daly et al., 2016). This is despite the recommendation of Ware et al. (2009) that CPD for principals should have a substantive focus on SEN. Second, the importance of appointing experienced teachers to the ASD class position has been identified within the Irish context (Banks et al., 2016; Daly et al., 2016), however, the literature to date has not examined the significance of appointing a principal with experience of autism to schools operating ASD classes. Finally, principal participation in professional organisations (such as the Irish Learning Support Teachers Association, and the Irish Association of Teachers in Special Education) has previously been recommended to Irish principals and teachers (Daly et al. 2016). It could thus be argued that participation in these organisations, and attendance at relevant professional conferences, could further support the capacity of the principal to foster the TSE of the ASD class teacher.

## **Recommendations**

Arising from analyses of the findings, discussion, and implications of the present study, several recommendations to develop policy and practice in relation to ASD classes can be made. These are outlined as follows:

- It would be valuable to use the ASSET to on a larger population of teachers to identify the aspects of autism education teachers feel most, and least confident in. This would help guide the development of CPD schedules for teachers of students with autism.
- Within schools, it is recommended that current policies pertaining to the allocation of teachers to ASD classes are examined.
- Within schools, it may be advisable to develop a core team of autism “experts”, to ensure that teachers who have mastery experience of autism teaching are allocated to ASD classes.
- As the present study has demonstrated the importance of allocating experienced teachers to ASD classes, it may also be necessary to review current redeployment panel policies, to ensure that the needs of the ASD class supersede panel redeployment requirements.
- Initial teacher education needs to be reviewed ensure that teachers are sufficiently prepared to work in all settings along the continuum of support.
- Access to CPD for prospective ASD class teachers should be improved, prior to their commencement in the role, and a CPD framework should be developed for teachers of students of autism.
- Principal teachers should be encouraged and facilitated to attend CPD pertaining to autism to ensure that principals have the knowledge required to provide instructional support to the ASD class teachers. Principals should also be encouraged to join professional organisations related to SEN, and to attend relevant conferences.

## **Limitations**

Although the present study succeeded in recruiting an impressive participant sample, the opinions and experiences measured within the questionnaire reflect only 19% of the total population of ASD class teachers in Ireland. As such, this study may be limited due to respondent bias, or due to an otherwise unknown participant variable. It is worth noting this at this point, that no factor in the social sciences can produce consistent effects on self-efficacy beliefs as human behaviour is conditionally manifested (Bandura, 2012). Due to the heterogeneity of individual characteristics, and dissimilarities in context, the four sources of efficacy expectations will have different effects on everyone (Bandura, 1977). Finally, the three-item measure of instructional support used may also have posed a limitation within the present study. For this reason, replication of the present study using a more sophisticated measure of instructional support, such as the Multifactor Leadership Questionnaire (Avolio & Bass, 2004), would yield more reliable findings.

## **Conclusion**

This study adds to the scholarly research in the field of autism education, as there is currently a dearth of literature pertaining to TSE and autism (Corona et al., 2017). It has also been noted that only a few studies have investigated the teacher-level variables that affect TSE (Chao et al., 2017). The present study identified significant positive correlations between the independent variables of years' special class teaching experience, engagement with CPD pertaining to autism, and perceptions of instructional support, with the dependent variable of TSE. This has implications for the allocation of teachers to ASD classes, the schedule and access to CPD for prospective and in-service ASD class teachers, and the professional development of principals.

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