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Examining the highs and lows of teacher self-efficacy for special class teachers working with learners with Autism/Autism Spectrum Disorder

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ABSTRACT

Background: According to data provided by the National Council for Special Education (NCSE), between 2020 and 2021, there was a 15% increase in the number of special classes specifically for learners with Autism/Autism Spectrum Disorder (A/ASD) attached to mainstream schools in the Republic of Ireland. Given the considerable growth in A/ASD classes in schools, examining the Teacher Self-Efficacy (TSE) of teachers working there enables us to identify strengths and areas for professional development (PD).

Method: This paper reports the findings from an Irish study into Teacher Self-Efficacy (TSE) of teachers working in special classes for learners with A/ASD. The study involved a large sample ($n = 139$) of teachers responding to an online questionnaire. The questionnaire included the Autism Self-Efficacy Scale for Teachers (ASSET).

Results: Analysis of the completed questionnaires reveals that the areas teachers feel least confident in are their abilities to train peer models, to teach play skills, and to translate assessment information into teaching objectives to the students. They felt most confident in their ability to use visual supports to foster student independence, to describe their student's characteristics that relate to A/ASD, and to communicate and work effectively with parents or caregivers.

Conclusions: The findings of this study present implications for professional development for teachers of learners with A/ASD, namely that upskilling is needed in training peer models, play skills, and translating assessment information into teaching objectives. The results also add further evidence to the use of the ASSET as a reliable measure of assessing the Teacher Self-Efficacy for teaching students with A/ASD.

1. Introduction

1.1. Education for students with Autism/Autism Spectrum Disorders (A/ASD) in Ireland

In Ireland, the educational needs of learners with A/ASD are increasingly being met in standalone special classes in mainstream schools that are specifically for students with A/ASD. For students with A/ASD, special classes are one form of a continuum of provision that ranges from full mainstream inclusion to home tuition (Daly et al., 2016). Presently, there are 1196 special classes for learners

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with A/ASD in Ireland (National Council for Special Education, [NCSE], 2021)), representing a 15% increase of such classes since the previous academic year. The maximum pupil teacher ratio in these classes is 6:1, and the care needs of the students are met by a minimum of two Special Needs Assistants (SNAs). Admission to these classes requires a professional report and should only be considered for students with A/ASD who, despite additional supports, cannot learn effectively within the mainstream classroom (NCSE, 2016). Although there are no clear guidelines as to the role of these classes, the National Council for Special Education (NCSE) has recommended that these classes should respond to the needs of students in the locality who would ordinarily attend a local school had they not an additional need (NCSE, 2016). This form of provision is similar to that found in other jurisdictions and is generally conceptualised as midway between inclusion and specialist provision: the students in these classes are supported to engage within the mainstream classroom and whole school activities as much as is possible, while also benefiting from smaller pupil: teacher ratios, and additional supports from auxiliary staff under the management of the special class teacher (SCT). In the UK for example, an equivalent to special classes exists through “designated units” located on the site of mainstream schools, characterised by smaller class sizes of 6–8 pupils. In Australia, “specialist support classes” within mainstream schools also have lower pupil numbers, while in the USA these settings are called “self-contained classrooms” though within the aforementioned jurisdictions, specialist settings do not cater exclusively for students with A/ASD.

1.2. Teaching learners with A/ASD

Before considering the literature pertaining to teacher self-efficacy (TSE) for those working with learners with A/ASD, it is first necessary to understand what is different between special education of learners with A/ASD and general education. First, the duality between education as the transfer of knowledge and education as therapy marks the teaching of learners with A/ASD as different from general education (Jordan, 2005). Second, bearing in mind that there is presently no evidence to support any single intervention that can be applied to meet the needs of all learners with A/ASD (Bond, Symes, Hebron, Humphrey, & Morewood, 2016; Jordan, 2005; Parsons, Guldberg, MacLeod, Jones, Prunty, & Balfe, 2009), these teachers are required to develop their competence in a vast range of evidence-based methodologies. Third, SCTs are required to develop Individual Education Plans (IEP), collect data on their pupils, interpret legislation and may need to manage medical needs of students (Boyer & Lee, 2001). Teachers of learners with A/ASD also face particular challenges in negotiating the school culture in relation to inclusion (Banks et al., 2016; Boyer & Lee, 2001), in promoting positive behaviour (Anglim, Prendeville, & Kinsella, 2018; Banks et al., 2016; Boyer & Lee, 2001; Scheuermann, Webber, Boutot, & Goodwin, 2003) and in gaining access to support from outside agencies (Banks et al., 2016; Broderick, 2014; Daly et al., 2016). In summary, there are several characteristics of working with learners with A/ASD that may warrant their teachers receiving targeted professional development (PD).

1.3. PD for SCTs

Though there are a remarkable number of courses available to support teachers of learners with special educational needs in Ireland, no study to date has investigated areas of perceived PD need within this cohort of teachers. In a 2016 study, Duggan identified 201 short PD courses available in Ireland. Of these, 147 were free to participants, and 81 of these were specific to the needs of learners with A/ASD. Additionally, seven universities are presently offering graduate level courses in special educational needs that are funded by the Department of Education (Duggan, 2016). The NCSE is the primary provider of PD pertaining to inclusive education in Ireland and the high quality PD provided through this service is highly valued by Irish teachers (Banks et al., 2016). Despite the wide availability of PD, Irish SCTs and other support teachers for learners with special educational needs feel ill equipped to meet the needs of their students (Banks et al., 2016). Many enter the role of SCT without a clear understanding of what their role will entail and would have appreciated greater levels of preparation prior to entering the special class. Primary challenges identified by these teachers include communicating with parents and the management of challenging behaviour (Banks et al., 2016). More recently, a report from the education inspectorate in Ireland identified several areas for improvement with regards the practice of SCTs in A/ASD classrooms (Department of Education, 2020). While these teachers were largely observed to employ a broad range of A/ASD specific evidence-based teaching approaches, inspectors felt that greater use of SMART (specific, measurable, attainable, realistic and time bound) targets, and the monitoring of progress towards the achievement of these targets required improvement in one third of classrooms observed. The inspectorate also criticised the poor utilisation of A/ASD specific assessments to inform planning.

Previous research internationally has indicated that PD for special education is most effective when it focuses on areas that teachers feel least confident in (Lai, Li, Ji, Wong, & Lo, 2016). While further research into the PD needs of SCTs is needed (Able, Sreckovic, Schultz, Garwood, & Sherman, 2015), several studies have identified gaps reported by teachers in their own skill sets. These include skills related to working with learners with A/ASD such as: knowing the characteristics of A/ASD (Van Der Steen, Geveke, Steenbakkers, & Steenbeek, 2020), knowing the specific teaching methodologies associated with this cohort (Van Der Steen et al., 2020), knowing how to accommodate and advocate for their students (Van Der Steen et al., 2020) and how meet their social and academic needs (Able et al., 2015). They also include skills for working with others (Van Der Steen et al., 2020), including parents (Banks et al., 2016; Lai et al., 2016). The NCSE has expressed concern that there are no training prerequisites for A/ASD class teachers ((NCSE, 2015), and two recommendations have been made in research reports for the development of a CPD framework for educators of learners with A/ASD (Bond et al., 2016; Parsons et al., 2009). It has also been noted that, despite the public expenditure spent on PD for special education, there is a lack of research into the impact that these courses have on teaching and learning (Ware et al., 2009). It is thus timely that an investigation into teachers’ perceived levels of competency specific to the A/ASD class setting is conducted.

1.4. Self-efficacy

Self-efficacy refers to belief in one's capacity to successfully execute a behaviour to achieve a desired outcome (Bandura, 1977, 1993, 1997). Higher self-efficacy has been associated with improved ability to successfully adapt and change (Bandura, 1997; Enochs & Riggs, 1990), improved emotional wellbeing (Bandura, 2012), greater resilience when faced with failure (Bandura, 1977, 1997; Bandura, Adams, & Beyer, 1977; Gibson & Dembo, 1985; Tschannen-Moran & Woolfolk-Hoy, 2001), and greater persistence in difficult situations (Bandura et al., 1977; Bandura, 1977, 1997; Klassen, Tze, Betts, & Gordon, 2011; Tschannen-Moran & Woolfolk Hoy, 2001; Zimmerman, 2000).

The creation of optimal learning environments and experiences relies heavily on the skills and self-efficacy of the teachers (Bandura, 1993, 1997). As such, the belief that one has the skills required to ensure that students learn has been conceptualised as Teacher Self-Efficacy (TSE) (Coladarci, 1992; Guskey & Passaro, 1994; Klassen et al., 2011; Ruble, Toland, Birdwhistell, McGrew, & Usher, 2013). Teachers with more experience tend to have higher levels of self-efficacy (Fackler & Malmberg, 2016), in particular when working with pupils with special educational needs (Ekins, Savolainen, & Engelbrecht, 2016; Shaikat, Vishnumolakala, & Al Bustami, 2019). Teachers with high levels of TSE are perceived by their students to be more competent (Miller, Ramirez, & Murdock, 2017). Furthermore, TSE has been associated with improved educational practices of mainstream educators such as being more positive in interactions with students (Gibson & Dembo, 1985; Hoy & Woolfolk, 1990), implementing a greater range of instructional supports (Ryan, Kuusinen, & Bedoya-Skoog, 2015) and using more effective forms of feedback (Gibson & Dembo, 1985; Ryan et al., 2015). While there is much research on the topic of TSE generally there is limited literature available on the topic of TSE and A/ASD (Corona, Christodulu, & Rinaldi, 2017).

1.5. TSE and A/ASD

Within education for students with A/ASD higher levels of TSE have been associated with more positive engagement with students, lower levels of teacher stress and increased target attainment for students (Love, Findley, Ruble, & McGrew, 2020). Several factors have been shown to positively influence perceptions of TSE amongst those working with learners with A/ASD. Commitment to a teaching philosophy (e.g. ABA [Applied Behaviour Analysis] or TEACCH [Treatment and Education of Autistic and Communication Handicapped Children]) is linked to greater levels of TSE (Jennett et al., 2003). Similar positive associations were found between engagement in PD pertaining to A/ASD and TSE for teaching students with A/ASD (Catalano, Fives, McKeating, & Barnes, 2020; Corona et al., 2017; Horan & Merrigan, 2019; [redacted for peer review]).

Mixed results have been observed for the correlation between teaching experience and TSE for those working with learners with A/ASD. While no correlation was evident within the research of Ruble, Usher, and McGrew (2011) or Corona et al. (2017), positive correlations have been identified elsewhere (Accardo, Finnegan, Gulkus, & Papay, 2017; Cappe, Poirier, Engelberg, & Boujut, 2021; [redacted for peer review]; Van Der Steen et al., 2020). The heterogeneous nature of A/ASD may contribute towards the above mixed findings. As each child with A/ASD presents differently prior experience of teaching students with A/ASD may not always provide sufficient mastery experience to increase perceptions of TSE.

1.6. Conclusion

There has been a considerable growth in the number of standalone special classes for learners with A/ASD within mainstream schools in Ireland in recent years. We know that many of these teachers enter their role in these classes without much knowledge of what the role involves and have requested further PD. Since PD for inclusive practices is most effective when it focuses on areas that teachers feel least confident in (Lai et al., 2016) it is important to ascertain the PD needs of teachers who are working in these environments. As such, this research was guided by the following research question:

What components of educating learners with A/ASD are special class teachers most and least confident in?

2. Methods

2.1. Data collection

Reflecting the value of specificity in measuring TSE (Enochs & Riggs, 1990; Love et al., 2020 Ruble, Toland, Birdwhistell, McGrew, & Usher, 2013; Tschannen-Moran & Woolfolk Hoy, 2001), this study chose to use the ASSET (The Autism Self-Efficacy Scale for Teachers), a scale developed specifically to measure the TSE of those who work with learners with A/ASD (Ruble et al., 2013). The ASSET is comprised of 30 items and is a self-report measurement tool. Items ask respondents to score themselves on their ability to conduct assessments, interventions, and to engage in classroom-based practices specific to the needs of students with A/ASD using a 1–6 Likert-style scale (Ruble et al., 2013). Sample items include “describe this student's characteristics that relate to autism”, “help this student understand others” and “teach this student play skills”. Reported reliabilities of this scale using Cronbach's alpha were.96 (Ruble et al., 2013).

The findings reported in this paper form part of a larger study. The overall study design was guided by a post-positivist epistemology (Phillips & Burbules, 2000). The larger study had two goals. The first was to establish what the TSE was for a large sample of these teachers (n = 139). The second was to establish what the relationship was between TSE and three independent variables: special class teaching experience, engagement with PD, and perceptions of principal's instructional support. The mean TSE scores from the

study and the relationship between TSE and the three independent variables have been reported elsewhere (redacted for peer review). In this paper we focus specifically on the individual items of the ASSET scale to deeply interrogate the TSE of this cohort of teachers, and to identify areas of PD need.

This paper reports on the individual items on the ASSET scale that yield the highest and lowest perceptions of TSE among the participants in this study. It is important to acknowledge here that the original scale was developed only with the intention of reporting the overall mean score for the scale, not the individual items. Statistical validity for this approach has not yet been established. Nonetheless, the descriptive detail on the individual items below is of value since it identifies key areas of strength and difficulty among SCTs and has relevance for those tailoring PD for these teachers. The total ASSET score does not give such detail.

2.2. Ethics

The guidelines published by the British Educational Research Association (BERA) informed many of the ethical considerations encountered (British Educational Research Association [BERA], 2018). This study also adhered to the formal ethical protocols of Dublin City University (DCU). Participants were made aware of what participation in this study would require of them and how their rights would be protected via a Plain Language Statement (PLS) (Cresswell, 2003). The PLS included details of the questionnaire layout, estimated completion time, and a plain language synopsis of the research. This form also included information on confidentiality, data storage and usage, and contact details for the researchers and the ethics department in DCU.

2.3. Piloting

The study was piloted with two SCTs known to the principal researcher, both of whom had extensive experience teaching learners with A/ASD and of conducting research in this field. Following two rounds of piloting the questionnaire several minor changes were made to the ASSET scale. Semantic edits were made to add clarity to questions and to make the questions more contextually appropriate to Irish ASD class teachers. "This student" was changed to "your students" to account for the context of the ASD classroom (e.g. describe your students' characteristics that relate to autism). The item "describe the implications for intervention based on this student's characteristics of autism" was changed to "describe educational interventions for students with autism" (Item 3), and "visual structure" was changed to "visual support" (Item 9). Additionally, while the ASSET originally required teachers to answer items that reflect their perceived self-efficacy to teach students with A/ASD on a 100-point rating scale the developers of the ASSET have noted that a 1–6 Likert-style scale is equally reliable (Ruble et al., 2013) and has been used elsewhere (Corona et al., 2017). To test the ASSET for internal consistency, Cronbach's alpha was computed. As the resulting alpha coefficient was >0.90 ($\alpha = 0.971$), the questionnaire can be considered very highly reliable (Cohen et al., 2007; Kline, 2000).

2.4. Sampling

The study population comprises SCTs working with learners with A/ASD (hereafter referred to as SCTs) in mainstream primary schools in Ireland. Early intervention teachers working in primary schools with students with A/ASD were not included in this study. A sampling frame was used to identify the entire population to be sampled (Czaja & Blair, 2005). The NCSE List of Special Classes in Mainstream Schools (NCSE (2018a)) formed the sampling frame for the present study. This list identified 744 special classes serving students with A/ASD in mainstream primary schools representing a total of 744 SCTs working in 392 different primary schools at time of data collection. Using this sampling frame it was hoped to achieve a sample of at least 135 teachers. This figure was provisionally selected to achieve a confidence level of 80% and a margin of error of 5.

Systematic sampling was used to recruit this sample. This systematic sampling process involved selecting a start point at random on the sampling frame, and then choosing every n th person on that list (Robson, 2002). The frequency interval of every fifth primary 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 SCTs, and ns = the required number in the sample (Cohen, Manion, & Morrison, 2007). This sampling method was selected as it facilitated the equal representation of different geographical areas within the sample. This was possible as the NCSE List of Special Classes (NCSE (2018a)) sort classes according to counties. As such, it was possible to invite representatives from every county in Ireland to participate in the present study.

The questionnaire was distributed via a hyperlink in an email. Email addresses for the schools in the sample were sourced using the Provisional School Data for the 2018/2019 Academic Year list (Department of Education & Skills, 2018). Initially, 145 schools operating one or more special classes for learners with A/ASD were contacted (representing 307 SCTs) via email. This process yielded a low initial click through rate (CTR) of thirty-five. As the primary factor in successfully recruiting a high proportion of the contacted sample is the number of contact attempts (Czaja & Blair, 2005), a reminder was sent to participants that did not engage with the questionnaire seven days after the initial invitation. Two further rounds of systematic sampling were required to achieve the desired sample size of 139 completed questionnaires. Responses with missing data were not considered valid within the present study.

2.5. Data analysis

The Statistical Package for Social Sciences (SPSS) Version 24 was used to organise data and to perform descriptive and inferential analyses. Descriptive analyses were conducted on the dataset to investigate the characteristics of the sample, and to investigate each of the 30 items on the ASSET scale.

3. Results

3.1. About the participants

One hundred and thirty-nine SCTs responded to the survey. This represented 19% of all SCTs working in mainstream schools at the time of data collection. Many of the teachers had limited experience of working with children with A/ASD. While nearly half of the participants reported 0–2 years of experience, a range of years of experience was reported across the group (see Fig. 1).

Despite the limited years working in special class settings, participants had significant engagement with PD pertaining to A/ASD (see Fig. 2). The present study had seven categories of PD (see Fig. 2). These can be recategorised using a system proposed by Horan and Merrigan (2019) into those with “little or no training” and “highly trained”. Using these parameters, 35.25% of our sample had “little or no training” ($N = 49$), and 64.75% ($N = 90$) were “highly trained”.

3.2. Mean ASSET scores

The mean scores across the 30 ASSET items were calculated, with higher mean scores (to a maximum of 6) reflecting higher TSE. The mean overall ASSET score for the sample was 4.38 ($SD = 0.892$) and scores ranged from 1.13 to 6. The Kolmogorov-Smirnov (KS) test was used to formally test the distribution of the data. As the significance value for this test was greater than 0.05 (Pallant, 2010) this test indicated that the ASSET mean scores follow a normal distribution ($D(139) = 0.065$, $p = .200$). The standard error for the mean was 0.076. In this case, the 95% confidence interval is within the range 4.23 – 4.52.

3.3. Individual ASSET items

Descriptive statistics were obtained for each of the thirty individual items on the ASSET scale. The mean scores for each item are presented in descending order in Table 1 below. 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” ($s^2 = 2.02$).

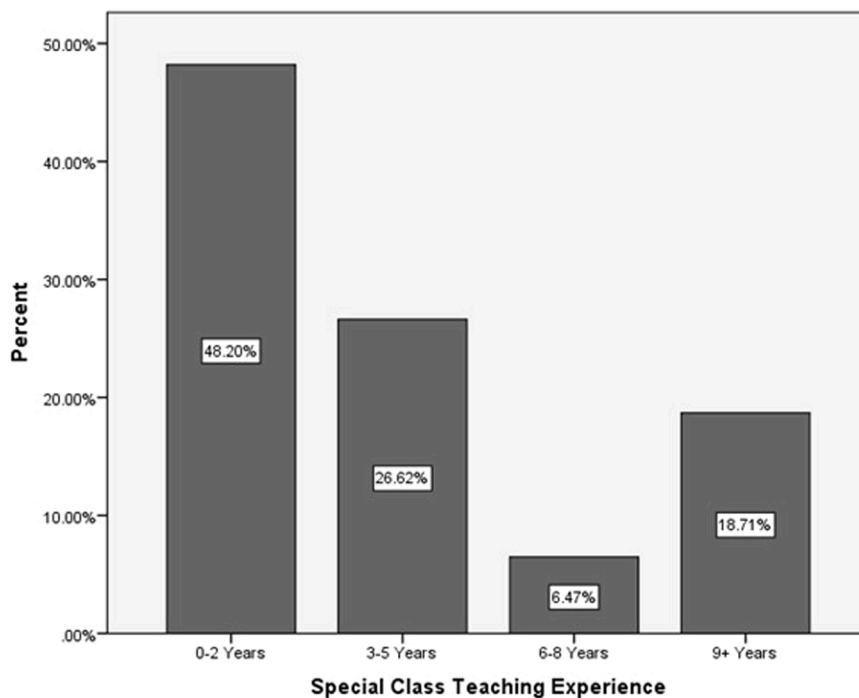


Fig. 1. Special class teaching experience.

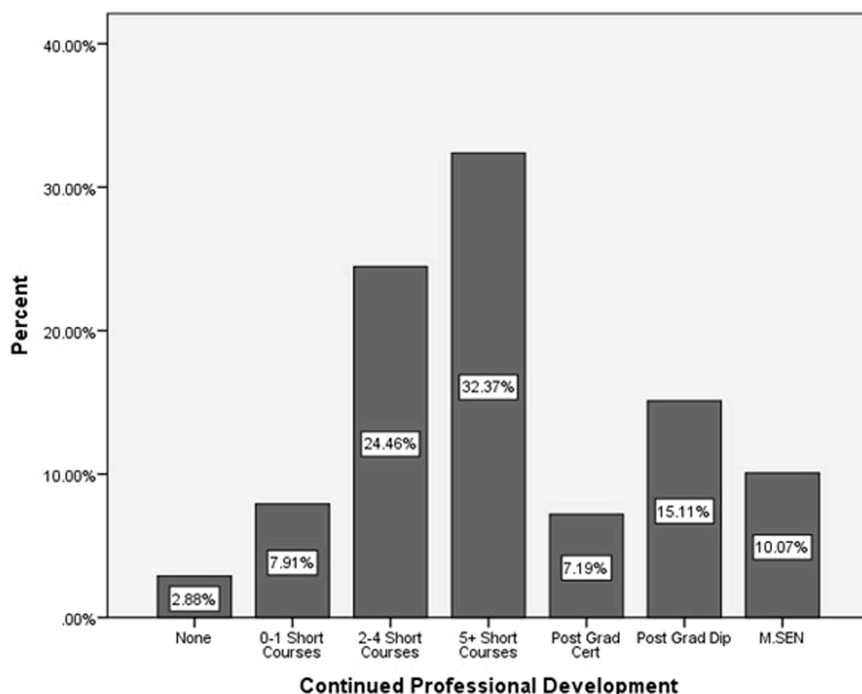


Fig. 2. Engagement in PD pertaining to A/ASD. Note: Post Grad Cert = Postgraduate Certificate course, Post Grad Dip = Postgraduate Diploma course, M.SEN = Masters in Special Educational Needs.

Table 1
Descriptive statistics for individual ASSET items.

Descriptive Statistics for Individual ASSET Items				
	Min.	Max.	Mean	Std. Deviation
Use visual supports to increase your students' independence.	1	6	5.20	.926
Describe your students' characteristics that relate to autism.	1	6	5.00	1.103
Communicate and work effectively with your students' parent(s) or caregiver(s).	1	6	4.98	1.119
Provide opportunities for communication in the classroom throughout the day for your students.	1	6	4.90	1.002
Organise the classroom to increase opportunities for learning for your students.	1	6	4.78	1.196
Help your students feel successful.	1	6	4.78	1.068
Generate teaching activities for your students.	1	6	4.64	1.210
Describe parental concerns regarding your students.	1	6	4.62	1.194
Implement positive behavioural supports for your students.	1	6	4.58	1.116
Design positive behavioural supports for your students.	1	6	4.54	1.131
Describe parental concerns regarding your students.	1	6	4.53	1.175
Describe educational interventions for students with autism.	1	6	4.47	1.144
Motivate your students.	1	6	4.45	1.124
Teach your students' academic skills.	1	6	4.40	1.214
Write a teaching plan for your students based on goals and objectives.	1	6	4.39	1.271
Assess the causes of problematic behaviours of your students.	1	6	4.39	1.152
Help your students remain engaged.	1	6	4.32	1.036
Write measurable objectives for your students.	1	6	4.32	1.346
Sustain your students' attention.	1	6	4.25	1.123
Conduct an assessment of your students' developmental skills/learning skills.	1	6	4.14	1.376
Assess your students' social interaction skills.	1	6	4.09	1.213
Help your students be understood by others.	0	6	4.06	1.395
Collect data to monitor your students' progress towards objectives.	1	6	4.06	1.278
Help your students understand others.	1	6	4.05	1.276
Assess your students play skills.	1	6	4.01	1.313
Make use of data to re-evaluate your students' goals or objectives.	1	6	4.01	1.305
Teach your students social interaction.	1	6	4.00	1.263
Translate assessment information in to teaching goals and objectives for your students.	0	6	3.94	1.350
Teach your students play skills.	1	6	3.91	1.236
Train peer models to improve the social skills of your students.	1	6	3.45	1.420

4. Discussion

4.1. A confident cohort of teachers

The participants in the present study had a mean total ASSET score of 4.38. Although analysis indicated there was a large degree of variance within the sample the data was negatively skewed towards the lower mean scores. This indicates that Irish ASD class teachers are relatively confident within their roles. The mean ASSET score can be compared to previous studies that utilized the ASSET as a measure of TSE. The preliminary study of the validity and reliability of the ASSET as a tool for measuring the TSE of teachers of students with A/ASD (Ruble et al., 2013) identified a mean ASSET score of 2.58 (N = 44). At time of publishing, the ASSET has only appeared twice in published literature since its inception (Corona et al., 2017; Love et al., 2020). Corona et al. (2017) identified a baseline ASSET mean score of 4.16 amongst the eighty educational professionals sampled. Though Love et al. (2020) did not report their baseline ASSET mean score, they report the scores (using a 100 point scale) following a consultation intervention for the control and experiment groups as 77.1 and 84.7 respectively.

In the Irish context, high perceptions of TSE for SCTs have recently been identified (Horan & Merrigan, 2019). The combined findings of the present study, and the work of Horan and Merrigan (2019) support the suggestion that Irish SCTs are a confident cohort. As teachers who perceive themselves to have higher levels of TSE are more likely to work harder to mitigate against external factors that influence a student's educational achievement (Bandura, 1997; Gibson & Dembo, 1985) this finding is a positive indictment of the work of SCTs in Ireland.

4.2. Areas of high and low self-efficacy

Analyses of the mean scores for each of the thirty individual ASSET items indicates that these SCTs feel confident in their ability to use visual supports to foster student independence, to describe their student's characteristics that relate to A/ASD and to communicate and work effectively with parents or caregivers. Participants felt least confident in their abilities to train peer models, to teach play skills and to translate assessment information into teaching objectives to the students.

The finding that participants felt less confident in translating assessment information into teaching objectives for their students corresponds with previous research in the Irish context. This has particular implications for teachers in their practice of developing measurable targets in Student Support Plans or Individual Education Plans which are used to monitor pupil-progress. Qualitative research into special classes in Ireland reported that teachers can find it difficult to identify formal assessment methods that are appropriate to the needs of students with A/ASD (Daly et al., 2016). The Department of Education in Ireland has also identified that there is a greater need to source and use A/ASD-specific assessments to identify needs and track progress and to use assessment information to generate SMART targets within this sector (Department of Education, 2020). Reflecting upon low TSE for training peer models, this report also highlighted that there is a greater need for collaboration between the SCT and the mainstream class teacher to ensure that integrated provision is planned for and aligns with specific targets for the child (Department of Education, 2020). Increased planning and collaboration with mainstream class teachers would likely support the SCT to identify suitable peer models and to plan activities accordingly. Considering these findings it is interesting to cross-reference these aspects of teaching learners with A/ASD with the twenty-three A/ASD-specific PD courses for primary teachers provided by the NCSE (NCSE, 2018b). Only one course related specifically to social skills (Social Skills), one concerned play and A/ASD (Introduction to DIR® Floortime), and one addressed A/ASD-specific assessment (PEP-3 Assessment Kit).

The Daly et al. (2016) study aside, this analysis of the thirty role specific activities in the ASSET fills a research gap in the Irish context. No quantitative investigations have been published within the Irish context that evaluate how SCTs in A/ASD class settings feel about the individual facets of their role. The only analogous study was conducted in Hong-Kong on a sample of teachers who were, or who would shortly be teaching, a student with A/ASD (Lai, Li, Ji, Wong, & Lo, 2016). The Lai et al. (2016) study noted that participants had high TSE for their abilities to discuss laws and policies regarding inclusion, working with physically aggressive students, and including parents in the school activities of students with disabilities. On the other hand it was noted that participants expressed lowest TSE for their ability to organise pair-work for students with disabilities, to make expectations about behaviour clear to students, and to make parents feel comfortable coming to school. The contextual differences however make it difficult to draw comparisons. Notwithstanding this, their study appears to be the only quantitative study that examines the facets of inclusive education that demand the highest and lowest levels of TSE.

5. Implications

The present study answers repeated calls for an investigation into the training needs of Irish teachers of students with A/ASD (Banks et al., 2016; Bond et al., 2016; Parsons et al., 2009) and responds to the current dearth of literature related to PD for SCTs (Able et al., 2015). The mean scores for the individual ASSET items can provide policy makers and PD providers, both in Ireland and internationally, with the information to ensure that PD provision aligns with the training needs of SCTs. The findings indicate that increased availability of high-quality PD on the topics of peer mediated social skills interventions, play for A/ASD, and assessment for students with A/ASD are warranted. This study also has the potential to contribute towards the development of a PD framework for teachers of students with A/ASD in Ireland as previously recommended (Bond et al., 2016; Parsons et al., 2009). Considering the high percentage of SCTs in this study with 0–2 years' experience working in this setting, it is imperative that access to PD for prospective SCTs is facilitated and encouraged. Similarly, initial teacher education courses in Ireland should be reviewed to ensure that graduating

teachers are sufficiently prepared to work in all settings along the continuum of provision in the Irish education system.

5.1. Limitations

This study represents the TSE perceptions of 139 participants representing 19% of SCTs in Ireland. While the sample collected is systematic, it is not entirely random and it is possible that there is a respondent bias among those who took part in the study. Further studies in the Irish context should aim for an entirely random sample to confirm or refute the findings of this research. Finally, the quantitative methodology used within this study may have failed to measure the subtleties and nuances of human behaviour, a factor that is a known disadvantage of this type of data collection (Robson, 2002). It is nonetheless worth considering this methodological limitation in the broader criticism of social research. The literature consistently cautions that social research can only generate imperfect evidence regarding the relationships between variables (Cresswell, 2003; Phillips & Burbules, 2000; Robson, 2002). A qualitative element to this study would have supported the generalisability of the findings and would have provided greater potential for participants to describe the reality of their role as a SCT. Future research on this topic should consider a qualitative element.

CRedit authorship contribution statement

Amy Ryan: Conceptualization, Methodology, Data curation, Formal analysis, Writing – original draft. **Elizabeth Mathews:** Writing – review and editing, Supervision.

Declarations of interest

None.

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