Teachers' perceptions of the effect of professional development on their efficacy to teach pupils with ASD in special classes

This article is based on a study which explored the impact of professional development on teachers' perceived levels of efficacy to teach inclusively in a special class setting for pupils with ASD at primary level. The central research question of the study investigated whether there were significant differences in teachers' perceived efficacy levels dependent on their level of professional development. This was measured using both quantitative methods, in the form of an online Teacher Efficacy for Inclusive Practices (TEIP) scale (Sharma, Loreman & Forlin, 2012), and qualitative methods, in the form of semi-structured interviews. Findings from the study indicated that 'highly trained' teachers had significantly higher perceived efficacy levels compared to those who had received 'little or no training'. This was supported by evidence from qualitative data. Moreover, evidence suggested that schools did not have policies for teacher allocation and professional development with mixed reports in relation to the level of inclusion experienced by teachers in their schools.

Keywords: special class, teacher efficacy, professional development.

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INTRODUCTION

Following the publication of the Special Education Review Committee (SERC) report (DES, 1993), Irish Government policy has been to provide, as far as possible, for the inclusion in mainstream schools of all children regardless of their Additional Support Needs (ASN). The passing into legislation of the Education for Persons

with Special Educational Needs (EPSEN) Act (Government of Ireland, 2004) was key in the implementation of Government policy. Parts of this Act underpinning the rights of pupils to an inclusive education setting and the establishment of a statutory basis for the National Council for Special Education (NCSE) have further supported inclusive education practices in Irish schools. However, not all parts of this act have been commenced (Government of Ireland, 2004).

Despite schools' and teachers' best efforts to provide education in an inclusive manner, this is fraught with challenges such as the need for increased knowledge, skills and expertise gained through professional development (Rose, Shevlin, Winter & O'Raw, 2015). In previous years, many pupils with ASN were excluded from their local mainstream school, both in Ireland and internationally (Forlin, 2010). Currently, however, it is common practice for pupils with ASN to be educated alongside their peers in the local mainstream school (Forlin, 2010). Teachers are indisputably key players in making the experiences of such pupils successful and inclusive, which necessitates the consideration of teachers' attitudes towards inclusion and factors impacting teacher efficacy such as professional development (Forlin, 2010).

Special classes have received increased Government funding in recent years with little empirical evidence as to their effectiveness for pupils with ASD and the impact of professional development on teaching and learning (Ware et al., 2009). Banks et al. (2016) highlighted the strong link between teacher expertise and positive pupil experiences in special classes. One avenue for enhancing teacher expertise and competency is through professional development (O'Gorman & Drudy, 2010). This article focusses on the professional development of teachers in special classes, and examines whether professional development courses enhance teachers' perceptions of their efficacy in the classroom.

LITERATURE REVIEW

Pertinent literature, at national and international level, regarding the inter-related factors of special class provision, teacher efficacy, professional development and inclusive policies and practices was critically evaluated prior to conducting the current study (DES, 2006; Parsons et al., 2009; Ware et al., 2009; Winter & O'Raw, 2010; NCSE, 2011b, 2016; McCoy et al., 2014; Rose et al., 2015; Banks et al., 2016; Bond, Symes, Hebron, Humphrey & Morewood, 2016; Daly et al., 2016).

Special Class Provision in Ireland

Special classes have been part of the continuum of provision in the Irish education system since the 1970s yet there still remains some debate regarding their definition (Banks et al., 2016). The majority of special classes admit only pupils from a specific category of need, such as ASD (Ware et al., 2009). The number of special classes in Ireland has increased dramatically in recent years. Recent figures suggest that currently 60% (n = 643) of all special classes at primary level cater for pupils with ASD (McCoy et al., 2014; NCSE, 2016b). While the Task Force for Autism (DES, 2001) recommended exploring a range of suitable options for pupils with ASD, it did not explicitly state that this should always be a special class setting. Ware et al. (2009) argue that "the special class model" often falls under the umbrella of "the special school model", thereby becoming somewhat invisible and has been somewhat neglected, in terms of research (Stevens & O'Moore, 2009).

Professional Development

Banks et al. (2016) reported that feedback was almost universally positive regarding supports given by the Special Education Support Service (SESS) and the Middletown Centre for Autism (MCA). Both of these providers offer training in specialised interventions such as TEACCH, ABA, and PECS. An evaluative report conducted by the DES (2006) recommended that all teachers working with pupils with ASD should attend training in these and other ASD-specific teaching and assessment interventions. There is a need for the development of a framework for professional development in the area of ASD, from general awareness among a whole school staff to higher level accreditation for specialist practitioners (Bond et al., 2016). One exemplar of recent progress was the development of a database by Duggan (2016), commissioned by the NCSE, comprising a comprehensive list and details of professional development in the areas of inclusive and special educational needs.

Findings in relation to Professional Development in Ireland

Much of the recent research in relation to professional development for teachers in Ireland has taken a qualitative form, utilising a case study methodology (Banks et al., 2016). Qualitative research allows for more in-depth analysis of specific cases, but may neglect to give an overall analysis of the research topic (Bryman, 2015). Previous researchers reported access to professional development for teachers prior to taking up positions in special classes and access to continuing professional development as major matters of concern (Winter & O' Raw, 2010; Banks et al., 2016). Professional development greatly enhances teacher confidence and competency, which are strongly associated with teacher efficacy (Sharma &

Sokal, 2015). Teachers and staff are central to inclusion in all schools, making it vital that teachers are enabled to gain the skills required to meet the challenges inclusion brings (Winter & O'Raw, 2010). The Inclusive Education Framework (NCSE, 2011a) cites professional development for staff as necessary criterion for developing staff well-being in an inclusive school.

Teacher Efficacy

Teacher efficacy is defined as a teacher's expectation that he/she is capable of enabling pupil learning and achievement (Ross & Bruce, 2007). Research at international level has consistently shown that teacher efficacy in teaching pupils with ASN in an inclusive setting is greatly enhanced by pre-service modules in initial teacher education and continuing professional development at in-service level (Leyser, Zeiger & Romi, 2011; Tzivinikou, 2015). However, Symeonidou and Phtiaka (2014) point out that while pre-service modules in ASN do have many benefits, they do not guarantee an in-depth understanding of inclusive education. Therefore, in-service training is vital in addressing theoretical and practical aspects of inclusive education. A significant volume of research regarding teacher efficacy has been carried out at international level, yet there remains a significant evidence gap in Ireland. Many studies have reported positive findings for pupils with teachers, who considered they were highly efficacious, including pupil achievement, motivation and their own sense of self-efficacy (Tschannen-Moran & Hoy, 2001).

METHODOLOGY

Research Design

The research questions for this study demanded both a quantitative and qualitative approach, involving a mixed methods design. The quantitative element of the study utilised an online survey using the Teacher Efficacy for Inclusive Practices (TEIP) scale (Sharma, Loreman & Forlin, 2012). In addition, seven special class teachers were invited to participate in semi-structured interviews with the researcher. The interview schedule included open-ended questions to address the following areas:

1) Allocation to special class teaching role including relevant school policies, 2) Professional development at pre- and in-service level, 3) Relevance of professional development received, 4) Levels of teacher efficacy for their role and 5) Policies in their school relating to professional development. The resulting data from the TEIP scale (Sharma et al., 2012) and the seven semi-structured interviews were then compared, merged and analysed simultaneously.

Participants/Sample

Purposive sampling was utilised to select participants for the questionnaire study. Only primary schools with special classes for pupils with ASD were contacted. At the time of this study there were 332 such schools and all were e-mailed using school addresses available on the internet. Teachers could use a link attached to access the online survey via Google Forms. Of 643 potential responses, 50 responses were received. A final response rate of 8% (n = 50) was recorded. Participants were then assigned to one of two groups, 'little or no training' or 'highly trained', based on their level of professional development. Criteria were used to allocate participants to each of these groups. Participants were deemed to have 'little or no training' if they had completed four or less courses which were short in duration. Participants were deemed to be 'highly trained' if they had engaged in five or more courses including the TEACCH course, or any accredited professional development such as a Certificate, Diploma or Masters in the area of ASN. 16 participants were assigned to the 'little or no training' group and 23 were assigned to the 'highly trained' group for further analyses. The 11 remaining participants were included in overall descriptive analyses but excluded from further inferential statistical analyses since they did not disclose details of their professional development. Seven current special class teachers from varying sized urban and rural primary schools were invited to participate in an interview. One male and six female teachers were interviewed. Teachers had between three and 15 years teaching experience and were aged from 25 to 45. It must be stated that the findings of this study need to be interpreted with caution, as the sample size and response rate were too small to enable the results to be generalised with great confidence.

Instrumentation

The current study used Google Forms to create an online version of the TEIP scale. The TEIP scale was chosen for this study due to its previous use across international contexts offering cross cultural validity and reliability (Malinen, Savolainen & Xu, 2012; Sharma & Sokal, 2015; Ekins, Savolainen & Englebrecht, 2016). Furthermore, factor analysis provided support for the use of this scale (Park, Dimitrov, Das & Gichuru, 2014). The first section of the survey related to teachers' levels of professional development, so that the researcher could assign participants to one of two groups. This subsequently allowed for inferential analysis to be performed on the data using SPSS (Statistical Package for the Social Sciences). Semi-structured interviews were chosen due to their flexibility, allowing participants to elaborate on a certain topic. They also allowed for more specific analyses and enabled the researcher to answer the specific research questions (Punch, 2014). Due to the complex concepts of ASN and inclusion, it

would be difficult to conduct the current study using quantitative methods only. Researchers in the field of education are increasingly calling for mixed methods paradigms to be utilised to increase the quality of research in this area (Johnson & Onwuegbuzie, 2004).

Data Analysis

Data from quantitative and qualitative elements of the study were collected separately but simultaneously, then merged and compared to form an integrated whole. The independent variable was professional development received by special class teachers with two groups: 'little or no training' or 'highly trained'. The dependent variable was teacher efficacy to teach inclusively as measured on the TEIP scale (Sharma, Loreman & Forlin, 2012). The scale has 18 items and each item can be responded to on a 6-point Likert scale with responses from 1 (strongly disagree) to 6 (strongly agree). The scale yields a total score with possible values ranging from 18 to 108. A higher score on this scale indicates that the teacher perceives themselves to have a higher level of teacher efficacy to teach in an inclusive classroom (Sharma & Sokal, 2015).

The qualitative data generated from interviews were analysed using thematic analysis. The six-step method for thematic analysis developed by Braun and Clark (2006) was adopted. On analysis of the transcripts, keywords were coded if they directly related to the research questions.

Ethical Considerations

The study was governed by ethical guidelines stipulated by University College Dublin's Taught Masters Research Ethics Committee – School of Education (TMREC-EDU-2017). Issues such as the recruitment of participants, consent, the right to withdraw, confidentiality, benefits and risks and the storage and handling of information were taken into consideration. Questions regarding professional development and the TEIP scale (Sharma, Loreman & Forlin, 2012) were administered online using Google Forms which is totally anonymous. Participants therefore did not feel pressurised to answer questions in a particular way. For the purpose of interviews, participants were reminded prior to the interview not to disclose any personal or potentially identifying information in relation to their own schools. A further step taken to minimise risk to interviewees was gaining informed consent. Written consent forms were stored separately from the dataset. The scale and interview data were stored on an encrypted USB key and kept in the thesis supervisor's office. Pseudonyms for interviewees and numeric codes for the online survey were used.

ANALYSIS AND RESULTS

TEIP Scale

Descriptive statistics relating to the continuous variable being measured, teacher efficacy, and the three factors within this scale can be seen in Table 1. The highest possible score on the overall scale, 108, indicated that a mean of 82.30 was relatively high. Similarly, the highest possible score that could be obtained for each factor was 36, indicating that mean scores of approximately 27 were also quite high. These results suggested teachers in special classes for pupils with ASD perceived that they had high teacher efficacy levels. Professional development of participants ranged from 'no training' to 'highly trained' practitioners with Masters level accreditation. The most common form of professional development was SESS day courses.

Table 1: Descriptive Statistics for Teacher Efficacy

	Mean	Standard deviation
Teacher Efficacy	82.30	11.65
Factor 1: Teacher Efficacy for inclusive instruction	27.54	4.63
Factor 2: Teacher Efficacy for collaboration	27.98	4.28
Factor 3: Teacher Efficacy for managing behaviour	26.78	4.46

A Mann-Whitney U test was conducted to investigate whether there was a significant difference in perceived teacher efficacy levels for special class teachers with 'little or no training' compared to those who are 'highly trained'. This test revealed a significant difference in perceived teacher efficacy for those with 'little or no training' (Md = 77.5, n = 16) compared to those who are 'highly trained' (Md = 85, n = 23), U = 88.5, z = -2.73, p = .006, r = .44, indicating a medium to large effect size. Further analyses were conducted to investigate whether any one individual factor was more significant than other factors. Factor 1 and Factor 2 both reached statistical significance which can be seen in Table 2.

Table 2: Summary of Results for Mann-Whitney U Tests Conducted on Continuous Variables of Factors 1, 2 and 3 or TEIP Scale Dependent on PD Received

Scale Factor	Group	N	Median	Significance level
Factor 1: Efficacy in inclusive instruction	Little or no training	16	25.5	.02
	Highly trained	23	30	
Factor 2: Efficacy in collaboration	Little or no training	16	26.5	.003
	Highly trained	23	30	
Factor 3: Efficacy in managing behaviour	Little or no training	16	25	.09
	Highly trained	23	28	

Thematic Analysis for Interview Data

A six-step method for Thematic Analysis developed by Braun and Clarke (2006) was utilised to analyse the data set generated from semi-structured interviews. Four key themes were uncovered during this process which are summarized as follows; 1) 'Confident is a strong word': Teacher efficacy, 2) 'You can always learn more': Attitudes towards professional development, 3) 'It's a different kettle of fish': Perceptions of special class teaching and 4) 'Policy vs. practice': Influence of policy and practice.

'Confident is a strong word': Teacher efficacy

Teachers displayed a variety of responses in terms of their efficacy and confidence in their ability to teach pupils with ASN. Two teachers reported nervous and anxious emotions prior to entering the special class setting.

'I was absolutely overwhelmed at the start, completely terrified' (Eimear).

'I was looking forward to it, it sounded like a good challenge' (Breda).

Some teachers felt more confident due to professional development in a specified area.

'I have done the Grad Dip and Masters and I know I would have good access to resources. 'If I didn't know something I would know where to find out about it' (Damien).

'You can always learn more': Attitudes towards professional development
The second theme that emerged from the data set was teachers' attitudes towards professional development. All teachers displayed a positive attitude towards

professional development, while teachers also felt that professional development had a positive impact on their own teacher efficacy levels.

'When you're teaching first you're relying an awful lot on the SNA and the other more experienced teachers around you...Whereas now...through experience and courses I do have more confidence in myself to put a plan in place and go through with it' (Amy).

'It's a different kettle of fish': Perceptions of special class teaching
On analysis of the interview data, there was a sense among teachers that special class teaching was almost a separate and distinct job from mainstream class teaching.

'Ya I was worried because you feel like it's a different job almost. You feel like the job like you're doing the job of three or four teachers because there are so many curriculums...you have such a range' (Amy).

'Policy vs. practice': Influence of policy and practice

There were discrepancies in teachers' schools in terms of policy and practice in relation to professional development. Some schools had policies in place which meant more than one teacher could not access the same course.

There's nothing like going on the course yourself and getting the information. So in some ways it's not a good idea that only one person can go on a course but in another way they have to police it in some ways' (Jane).

These excerpts from teachers exhibit a variety of responses in relation to the four key themes and sub-themes. Differences in perceived teacher efficacy were evident in both quantitative and qualitative data with mean scores on the TEIP scale (Sharma, Loreman & Forlin, 2012) for overall teacher efficacy and the three sub-factors being relatively high.

DISCUSSION

Differences in Perceived Teacher Efficacy

In this study, quantitative analysis revealed that teachers who are 'highly trained' perceived they had significantly higher efficacy than teachers who had 'little or no training'. Qualitative analysis revealed similar patterns in perceived teacher efficacy levels, where 'highly trained' teachers reported higher confidence levels across a range of areas in relation to special class teaching. The findings also show that teacher efficacy is enhanced through professional development, which is in

line with previous research (Sharma & Sokal, 2015). At national level, there has not been, until now, a study which investigated in a quantitative manner, perceived teacher efficacy levels for teachers in special classes for pupils with ASN, making the current study somewhat unique. Quantitative data, supporting professional development of special class teachers to enhance teacher efficacy, could provide support for continued Government/DES investment in this area.

Teachers' Experiences of Efficacy

There was a variety of reported teacher efficacy levels in both the qualitative and quantitative data. Previous Irish qualitative studies have comprehensively explored teachers' levels of confidence and competence in special classes for pupils with ASD, a construct strongly associated with teacher efficacy (Banks et al., 2016; Ekins, Savolainen & Engelbrecht, 2016). A common theme of both the current study and recent Irish research was teachers' dissatisfaction and statements of frustration with their capacity to meet the complex needs of pupils they teach (Banks et al., 2016). This capacity, "to put a plan in place and go through with it" (Amy), could be increased with access to ongoing professional development. The majority of participants felt that they lacked access to professional supports that could not be enhanced through training, for example speech and language therapy and occupational therapy. A core characteristic, reported by all participants in the current study, was that perceptions of teacher efficacy levels were heavily dependent on getting to know the child as an individual as "every child is different. Similar strategies can work with children with very different profiles. And the same strategy may not work with children with similar profiles either" (Damien). This is a very encouraging finding for educators and parents of pupils with ASD. Teachers approach their role through a social model of disability as opposed to a medical model of disability - a vital prerequisite for true inclusion (O'Gorman & Drudy, 2011). Professional development is vital in order to truly enhance a teacher's perception of their efficacy levels, so that true inclusion can occur (O'Gorman & Drudy, 2011).

Teachers' Experiences of an Inclusive Environment

Previous research regarding the inclusivity of special classes has generally been positive (Ware et al., 2009). Parents and teachers have cited that special classes are the most educationally and socially inclusive model available to children with ASD in Ireland (Ware et al., 2009). The current study did not fully support these findings. All teachers acknowledged improvements in inclusion in recent times. However, participants who noted a truly inclusive environment existing in their school, were in the minority (n = 2). It was somewhat unclear why this emerged but could be partly due to lack of whole-staff training in addressing theoretical and practical aspects of inclusive education (Symeonidou and Phtiaka, 2014).

An exclusive environment was more apparent in the current study and was hallmarked by the theme of special class teaching as a separate role. This was apparent in almost all interviews and supported through teachers' extracts where they referred to the special class in almost a different geographical location within the school. This is in conflict with recommendations of best practice from the NCSE (2016a) which recommended that special classes should be located centrally within the school. This theme was reinforced through the language used by all teachers when speaking about their class. "Down to the unit" automatically implies a differential in power between the mainstream and special class settings (Amy). The definition of inclusion, central to the current study, which posited inclusion as a whole-school responsibility, was in conflict with the reality of inclusion, which considered inclusion to be more of a "bug bear" for the individual special class teacher (NCSE, 2011a).

Policy vs. Practice for Professional Development and Teacher Allocation

Evidence from semi-structured interviews suggested the following: a disjuncture between policy and practice, inflexibility around policy, and a lack of policy or lack of teacher awareness of policy. This was a somewhat surprising finding considering the NCSE and the Irish Government have stipulated in publications that schools should have policies in place, in relation to professional development for all staff involved in the education of pupils with ASD and for teacher allocation ((DES, 2007; NCSE, 2011a; MCA; NCSE, 2013; NCSE, 2016a). All participants pointed out that professional development support should be continuous in nature and available when a specific need arises. Concerning teacher allocation, the majority of teachers stated they had "little or no training" before entering the special class role (Eimear). In contrast to previous findings by Daly et al. (2016), which reported an excellent commitment by principals in recruiting experienced staff to teach in special classes, the current study had mixed findings. Approximately half of the teachers in the current study had been recruited on the basis of specialised experience or interest in the area, while the other half were appointed as newly qualified teachers and assigned immediately to the special class.

LIMITATIONS

The primary limitation of the current study was the low response rate of 8% (n = 50) from special class teachers which warrants further investigation from Government funded bodies such as the NCSE. The generalisation of the findings of the current study would be greatly enhanced with a larger sample size.

RECOMMENDATIONS FOR FUTURE RESEARCH

- The Government/DES could investigate the most effective form of professional development for teachers, in terms of: practical vs. theory based, piloting a continuum from basic awareness to higher level accreditation and continuous professional development for specific needs.
- The Government/DES should continue to invest in professional development such as the Graduate Diploma in ASN.
- More up-to-date quantitative data is needed in the area of special class provision to help inform Government spending on professional development for teachers and how this relates to teacher efficacy.
- The NCSE could use their database of special classes to administer the TEIP scale to all teachers which would enable researchers evaluate what factors influence teacher efficacy.
- The SENO could help schools become more aware of the publications outlining best practice for setting up, organising and evaluating special classes.
- Schools ought to ensure they have a policy in place for professional development that is flexible and acknowledges a continuum for professional development.
- Schools should support their teachers when engaging in professional development and utilise staff expertise to maximise benefits for pupils with ASN, in line with NCSE Guidelines.
- A key recommendation would be to include feedback from pupils in special classes regarding the inclusivity of their school environment. Their feelings are of central importance and should be considered in research concerning their education and well-being.

CONCLUSION

Findings from the current study reinforced previous findings in this field regarding professional development and perceived teacher efficacy but added a new dynamic by examining efficacy levels in a quantitative manner, which is unique in Irish research. Key findings from the current study revealed significantly higher perceived teacher efficacy levels for 'highly trained' teachers. This was supported by qualitative data. Furthermore, analysis of the qualitative data uncovered a variety of practices in schools in relation to professional development and teacher allocation. It is hoped that this research can be expanded upon, as teachers are key players in ensuring an inclusive environment exists for their pupils. One avenue

for enhancing inclusion is through professional development (O'Gorman & Drudy, 2011). Inclusion, the theoretical lens of the current study, and debate surrounding inclusion is currently at the core of research in ASN and is dependent upon factors such as professional development, teacher efficacy and policies and practices in schools. Findings from this study supported the social model of disability which is a vital prerequisite for true inclusion (O'Gorman & Drudy, 2011). Research, such as that outlined here, is especially pertinent in the current atmosphere with a new model of resource allocation for ASN.

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