Student teachers' perceptions of their competence to meet the needs of pupils with Autistic Spectrum Disorder in mainstream primary schools

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1 Introduction

This report provides details of a collaborative research project carried out during 2008-2009, by St. Mary's University College Belfast and Mary Immaculate College Limerick with assistance from the Standing Conference on Teacher Education North and South (SCoTENS).

St. Mary's University College Belfast is a college of the Queen's University Belfast, which formally came into existence in 1985 following the amalgamation of St. Mary's College and St. Joseph's College. The origins of St. Mary's however, can be traced back to 1900 when the Dominican Sisters opened St. Mary's Training College for women teachers. The college provides initial primary and secondary teacher education in English and Irish resulting in a Bachelor of Education (B.Ed.) degree; a Post Graduate Certificate in Education (PGCE) for teachers wishing to work in the Irish medium sector; a Master of Education (MEd) programme for qualified teachers and a degree in Liberal Arts.

Mary Immaculate College is an autonomous third-level college, academically linked to the University of Limerick, offering undergraduate and postgraduate degrees in Education and the Arts. The college was established as a college of professional education for Catholic Primary School teachers in 1898 by Bishop O' Dwyer and the Sisters of Mercy. Seventy-five students were enrolled in the college on completion of the college building in 1901. Since then, the college has expanded significantly both in terms of numbers and of course provision, but still remains a centre of excellence for the professional education of teachers.

The rationale for the current research was underpinned by the increasing inclusion of pupils with special educational needs in mainstream schools, including pupils with Autistic Spectrum Disorder (ASD). There is an obligation on teachers to meet the needs of these pupils and this has placed increased demands on all those involved, not least on teacher educators who must provide teachers who can meet the diverse needs of all pupils in inclusive classrooms. This inevitably impacts on the course content delivered to students in initial teacher education (ITE), as Lambe and Bones (2008) note: "Those who are responsible for pre-service education will also be required to review and modify existing initial teacher education (ITE) programmes, so that new teachers will be effectively prepared for classrooms that are more inclusive than those that they themselves had experienced."

The purpose of this project was to ascertain how competent student teachers feel about addressing the needs of pupils with ASD after the teaching element of the B.Ed. course. Additionally, the project sought to discover what impact, if any, school experience placement had on students' attitudes and competence in this area when they were in the final year of their B.Ed. degree.

1.1 What is Autistic Spectrum Disorder?

An Autistic Spectrum Disorder is a complex developmental disability that essentially affects the way a person communicates and relates to people (American Psychiatric Association, 1994). Asperger syndrome is a condition at the more able end of the spectrum and these pupils will generally be in mainstream schools in addition to those pupils with high functioning autism. High-functioning autism and Asperger syndrome are both part of the 'autism spectrum'. The main difference between the two is thought to be in language development. People with Asperger syndrome, typically, will not have had delayed language development when younger. At the 'less able' end of the spectrum is Kanner's syndrome, sometimes referred to as 'classic autism'. While there has been much debate around the definition of autism, and Asperger syndrome in particular, it is now generally accepted that both autism and Asperger syndrome fall within a broader group of social and communication disorders, commonly known as Autistic Spectrum Disorders (ASD) (DE, 2001, 2.3). One of the most significant contributions to the clinical understanding of autism as a spectrum disorder, has been that of Lorna Wing who concluded that there were three areas of impairment associated with ASD. She called these areas the Triad of Impairment (Wing and Gould 1979). The Triad of Impairment comprises difficulties with communication, social understanding and social behaviour, and impairment of imagination and thought. Impairment in communication is apparent in that pupils develop language which is divorced from its role in communication, they lack communicative intent. A key characteristic of those with Autistic Spectrum Disorder is their difficulty in understanding the social behaviour of others. Children with ASD are very literal thinkers and interpreters of language, failing to understand its social context. Difficulties in the area of imagination and thought are manifest by a lack of flexibility in thinking and behaving according to any given situation. This is sometimes referred to as theory of mind, the ability to attribute mental states such as feelings and desires to oneself and others (Baron-Cohen, 2008). Some children with ASD develop a special interest in a topic or activity which may be followed to extreme lengths.

However the manifestation of this impairment and the severity will vary from one child to another. It must be remembered that autism is diagnosed by the existence of the full triad of impairments and the particular manifestation of the triad will vary among individuals. There are no behaviours *per se* that by their presence or absence indicate autistic spectrum disorders; it is the overall pattern and underlying difficulties that define autism (Jordan *et al.,* 1998, p. 14).

Those pupils, who are in mainstream schools may have average to above average intelligence and develop adequate linguistic abilities (Wing, 1991.) However, because these pupils are on the autistic spectrum they display characteristics of the Triad of Impairment.

In the classroom these pupils can be inflexible. They dislike any change in routine and adapting to new situations poses difficulties for them. They will have difficulty playing with other children and making relationships with other children is problematic. They have difficulty in seeing any situation from the point of view of another. They may need to be taught skills which come more naturally to their typically developing peers. Any new skill tends to be tied only to the situation in which it is learned which means that children with an ASD will need specific help to generalise skills (Jordan *et al*., 1998). Pupils with ASD are however not a homogenous group and individual pupil's needs may vary.

1.2 Inclusion

The definition of the term inclusion is not universally agreed upon and to a certain extent the development of definitions of inclusion has paralleled educational reforms in this area (Humphrey, 2008). The move to a more inclusive education system has been supported internationally by UNESCO's (1994) Salamanca Statement which asked Governments to adopt the principle of inclusive education as a matter of law or policy. UNESCO (2005) views inclusion as a "dynamic approach responding positively to pupil diversity and of seeing individual differences not as problems, but as opportunities for enriching learning". Frequently in the discourse of special educational needs, inclusion and integration are talked of as though they are synonymous. Integration conveys a sense that pupils must adapt to school, with no assumption that the school will adapt to accommodate a greater diversity of pupils (Mittler, 2000). The idea that inclusion could mean merely placing a pupil in a mainstream school and adding 'bolt-on' support has been replaced by the notion that schools need to adapt and be flexible in meeting the needs of individual learners.

Schools must not merely interpret inclusion as making additional provision for children with special educational needs: "It is now time … to shift the focus to individual learners and the range of learning opportunities that might be created and sustained to help *all* learners realize their potential" (MacBeath & Mortimore, 2001, p. 207 author's emphasis [cited in Abbott, 2006]).

Inclusion as it pertains to the education of students with special needs, is complex and is not just about the placement of a pupil in a school. If inclusion is to be effective the individual needs of all children in the classroom must be met and without a needs-based focus, inclusion is nothing more than another label and students will continue to experience exclusion when placed in the regular classroom (Lynch *et al*., 2009).

Inclusion, it is acknowledged, is also about culture and ethos. Teachers bring their own set of values and beliefs into teaching and into the schools. It could therefore be said that regardless of legislation and policies it is the individual teacher who enables an inclusive education for all pupils in his or her class. Student teachers will also bring their values and attitudes to inclusion into their initial teacher education and subsequently into schools. However these values and attitudes are unlikely to be fixed and may change in tandem with their experiences in taught sessions and through school experience. Mintz (2007) found a picture of fluidity in terms of student attitudes to special educational needs (SEN) and inclusion.

Amongst the increasing numbers of pupils with SEN attending mainstream schools, there are increasing numbers of pupils with Autistic Spectrum Disorders. Increasing numbers of pupils with ASD are there not only because they are part of the social and political movement towards inclusion but because of the widening of the ASD category to include those who previously had not been identified.

1.3 Special educational needs in the Northern Ireland context

The framework for addressing special educational needs in Northern Ireland is the Education (Northern Ireland) Order (DENI, 1996) from which emanated the Code of Practice on the Identification and Assessment of Special Educational Needs (DENI, 1998) One of the Code's core and fundamental principles states that the needs of most pupils will be met in mainstream schools, and without a statutory assessment or a statement. Children with special educational needs, including those with statements, should, wherever appropriate and taking into account the wishes of their parents, be educated alongside their peers in mainstream schools (DENI, 1998, 1.6). This mirrored the Department for Education and Skills (DfES) (1994) Code of Practice issued for England and Wales. The introduction in 2005 of the Special Educational Needs and Disability (Northern Ireland) Order (SENDO) furthered the inclusion agenda and required education bodies including schools, to make reasonable adjustments to ensure people with disability in education do not suffer a substantial disadvantage in comparison to people who are not disabled. SENDO amended and added to the existing Education (Northern Ireland) Order 1996 and has increased the rights to inclusion in mainstream schools of children with special educational needs if that is the wish of their parents and it is compatible with the provision of efficient education for other children.

More recently the Department of Education Northern Ireland (2009) has undertaken a review of special educational needs (SEN) and inclusion. The resultant proposals, currently under consultation,

are in the context of the development of an inclusive framework. This document also subscribes to the principle of inclusion stating that the proposals aspire to an inclusive education system in which the presumption is that children spend as much time as possible in a mainstream setting whilst acknowledging that for those with more complex needs, a special school may be the appropriate setting.

1.4 Special educational needs in the context of the Republic of Ireland

In the Republic of Ireland in 1993, with the publication of the Report of the Special Education Review Committee (SERC), there was a major change in educational policy towards children with special needs. The SERC Report dealt comprehensively with the educational implications of special needs. It provided a definition of special needs which ranged from those with severe and profound difficulties to those who were exceptionally able and included both physical and mental disabilities. It recognized that most parents wanted their children with special needs educated in mainstream schools. In 1998 the Education Bill was passed with the introduction that the Act would provide for the education of every person in the state including those with disabilities or any other special educational needs. This Act made it a constitutional right of children to receive education appropriate to their needs; there was a requirement for the Minster to provide support services of a level and quality which met the needs**.** However, the definition of special educational needs as "the educational needs of students who have a disability and the educational needs of exceptionally able students" (Government of Ireland, 1998, p.8), represented a much narrower and more restrictive understanding of special educational needs than that offered by the SERC Report (Government of Ireland, 1993, p.18). Notwithstanding this more restricted definition, the Education Act (1998) did contain much relevance to the inclusion of children with SEN (MacGiolla Phádraig, 2007). In 2000 it was recognized that there were still problems with co-ordination and limited resources of professional services across the country. The Government planned to put in place a national support service to ensure early and comprehensive identification of special needs and to promote inclusion. In 2002 substantial guidelines were produced for the teaching of pupils with special educational needs (Government of Ireland, 2000) as a direct response to the findings and recommendations of the Study of Remedial Education in Irish Primary Schools (Shiel *et al*., 1998). Specifically, the guidelines attempted to outline best practice and policy in the context of learning-support and provided both explicit and implicit support for the promotion of inclusive practices in special education. Overall, the publication of the learning support guidelines marked a significant stage in the development of government policy towards inclusion. (MacGiolla Phádraig, 2007).

In 2004 The Education for Persons with Special Educational Needs (EPSEN) Act was passed ensuring the right of persons with special educational needs to be educated where possible in an inclusive environment. The Act states: "every child who has special educational needs must be educated in an inclusive environment with children who do not have special educational needs." (Government of Ireland, 2004, p.3). However, this is tempered with the provision that this will not be required if it would not be in the best interests of the child with special needs or if it would impair the effective provision of education for the children with whom the child is to be educated. This resonates with the SENDO 2005 Northern Ireland legislation which gives entitlement to mainstream placement for pupils with special educational needs providing it "is compatible with the provision of efficient education for other children."

In summary then, both jurisdictions could be said to have an inclusive leitmotif in their policies and legislation by stipulating that pupils with special educational needs should be educated in mainstream schools. However, within both jurisdictions there are stipulations which limit the inclusive statements made.

1.5 Task group reports on autism

In November 2000, the Department of Education Northern Ireland established the Task Group on Autism. Separately from the work of this group, in the Republic of Ireland, a Ministerial Task Force on Autism was also established. The reports were borne out of a recognition of the concern of parents and educationalists throughout the island of Ireland about the adequacy of services for children with autistic spectrum disorders. It is stated that many pupils with ASD can benefit from mainstream education but many of these will require specialist support, and their teachers will require training. The report also acknowledges that it is evident that mainstreaming will not be successful for all pupils with ASD at all stages of their development (DE, 2001, 3.58). One of the essential policies and practices which the Republic's report embodies is that priority is given to the enrolment of the child or young person in a mainstream school and the report also states that teachers, parents and others aiming to teach these children need training in the core aspects of ASDs in order to choose and provide appropriate teaching interventions and secure successful outcomes (Government of Ireland, 2001, 5.3.2).

Both reports showed that there was a wide variation of rates of diagnosis of and identification of ASD. The Task Groups stated that the central factor in educating an individual with ASD is to understand the nature of the disorder in order to facilitate learning and social inclusion, it is also stressed that teachers, parents and others planning educational programmes for individuals with

ASD should have an understanding of ASD. It was recommended that the individual needs of a child with an ASD must be identified, and responded to, in any educational programme in relation to the curriculum content, the teaching strategies and approaches used and that social skills training should be provided as an essential element of intervention programmes for children and young people with ASD (DE, 2001). "Training courses in ASD appropriate methods for early childhood education should be part of the portfolio of ASD training courses provided by the Department of Education and Science. Such programmes could also be provided by the universities and colleges of education." (Government of Ireland, 2001).

The implications for teachers and teacher educators are apparent. If barriers to the learning of these pupils are to be minimized it would seem that at the very least teachers should have an understanding of ASD and the difficulties which these pupils might encounter in mainstream classrooms. Teachers will also need to be equipped to recognize the characteristics of ASD as many of these pupils may be in mainstream schools without an identification of their difficulties. If teachers are to meet the needs of these pupils they will need to have a repertoire of teaching strategies and approaches which they can employ if the pupil with ASD is to realize inclusion. Consequently, teacher educators will need to address these areas in course content for students in initial teacher education.

2 Background to the research

Participants in this study were from St. Mary's University College, Belfast (St. Mary's) and Mary Immaculate College, Limerick (MIC). Students in St. Mary's engage with a four-year Bachelor of Education (B.Ed.) degree programme and MIC students a three-year B.Ed. degree programme.

In St. Mary's, in Year 3, students take a compulsory course entitled Special Educational Needs and the Primary Curriculum. This course runs all year and addresses a wide range of areas of special educational needs. There are four one-hour taught sessions dedicated to Autistic Spectrum Disorder. In addition, in Year 4, there are optional modules, one in the mainstream school context and one in the context of the special school. Each of these modules contains material on ASD which is additional to that taught in the Year 3 module.

In MIC, all students take an eight-week course entitled Early Years Inclusion as part of a module on Foundation Years Education in Semester 3 of their six-semester B.Ed. programme. In semester four all students are offered a ten-week programme on Inclusive Education for Children with Special Educational Needs. As part of this programme they receive two 45-minute sessions on An Introduction to Teaching Pupils with ASD and one 45-minute session on An Introduction to Teaching Pupils with Asperger's Syndrome. In addition, students are offered an elective in the final semester of their B.Ed. programme where approximately thirty students take a module on Inclusive Education for Children with SEN.

The design for this study was mixed-method which generated both quantitative and qualitative data. The rationale for this selection was based on the pragmatic notion of being able to incorporate the strengths of both methodologies into the study and provide an integrated approach to education research inquiry (Erikan & Roth, 2006). Mixing both methods has also taken into account the complexity of the questions posed and allowed for more insightful and personalised contributions from the student teachers. This method has the advantage of creating a piece of research with valuable data from both paradigms.

3 Methodology

Data gathering for this research study consisted of two phases – a questionnaire and focus groups. In phase one, a one-page questionnaire (Appendix 1) was designed to elicit responses from the student teachers in order to explore the extent the B.Ed. degree programme, in both participating higher education institutions, facilitates its students in meeting the needs of pupils with autistic spectrum disorders in mainstream primary schools. The questionnaire is divided into five parts and consists of fifteen questions. The questionnaire was piloted with a group of students from both institutions and a number of changes resulted from this. Student teachers, in the penultimate year of their teacher education programme answered the questionnaire; this was Year 3 for students from St. Mary's and Year 2 for students from MIC. The questionnaires were administered at the end of their taught courses in inclusive education for pupils with special educational needs.

In phase two, a number of focus groups were conducted with students in the final year of their teacher education programmes (Year 4 in St Mary's and Year 3 in MIC). This was carried out using a semi-structured interview agreed for both institutions (Appendix 2). The focus group was chosen as the reliance is on the interaction within the group. The participants' rather than the researcher's agenda can predominate (Cohen *et al*., 2007). Focus groups were audio-recorded and transcribed, allowing for detailed and accurate analysis of the data. This was undertaken to ascertain if students' competence levels were enhanced by their teaching/school experiences as is evidenced in Niemeyer and Proctor (2002, p. 54.) who assert that: "While the student teachers understood the importance of their coursework, they felt that their student teaching experience provided good role models for inclusion and thereby facilitated their competence in working with children who have disabilities".

Anonymity was promised to student teachers at the outset of the research and was maintained throughout the project. All participants gave informed consent at each phase. Students were given comprehensive information as to the purpose and scope of the research, and were given the option of not completing the questionnaire and of not participating in the focus groups.

4 Results of the questionnaire

Frequency, descriptive and other statistical analyses were conducted on resulting data from each question (with the exception of question 6 which was open-ended). Correlations were also investigated. Results are illustrated by text, tables and figures where appropriate. Whilst the majority of findings are combined for both higher education institutions as a whole, there are occasions when they are also presented for each separate higher education institution.

The responses to question 6 were subjected to content analysis. This analysis was conducted by determining reoccurring key words extracted from the dataset and reducing the text to categories which consisted of a word, a set of words or phrases. As specific words or patterns of words are indicative of the research question which is: 'how well prepared participating student teachers feel they are in addressing the needs of their pupils with Autism?', these key words were quantified.

Possible correlations were explored between:

- Whether students thought a child with Autism should be included in mainstream primary school and perceived competency levels;
- Work experience with a child with autism and perceived competency levels;
- Work experience with a child with Autism and whether a child with Autism should be included in mainstream primary school.

4.1 Higher education institution

There was a total of 508 students who completed the questionnaire, with a working sample of 404 (80%) students from MIC and 98 (19%) from St. Mary's. There were 6 (1%) students who did not state which higher education institution they were attending and therefore their data were not included in the analysis comparing each higher education institution.

4.2 Gender of students

A working sample (499 students) for both higher education institutions was comprised of 425 (85%) females and 74 (15%) males.

4.3 Age range of students

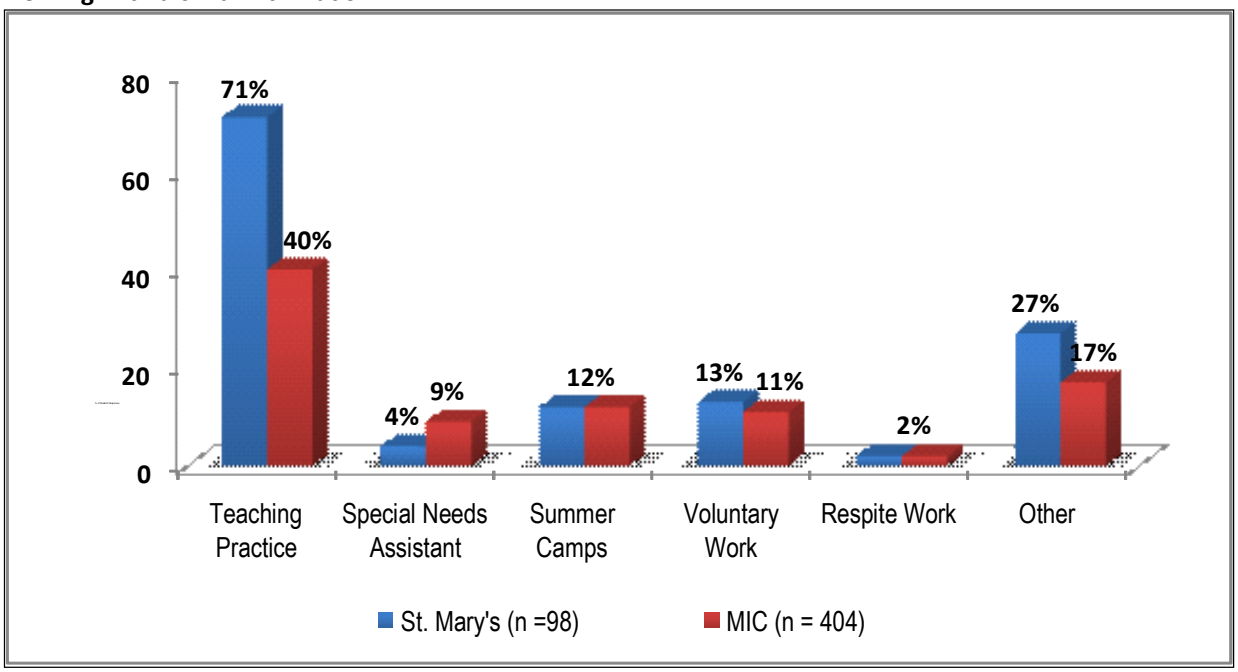
A total of 490 students indicated the age group which they belonged to on the questionnaire, with 18 students providing no response to this question. For both higher education institutions, 421

(86%) students were 19-21 years old, 21 (4%) were 22-24 years old, 31 (6%) were 25-30 years old, 10 (2%) were 31-35 years old, 2 (1%) were 36-40 years old, and 5 (1%) were 41 years old or over.

4.4 Experience of working with a child with Autism

Overall 99% of students reported they had previous experience of working with a child with Autism. St. Mary's students reported a greater percentage than MIC students with regard to teaching practice and other work experiences, with the exception of summer camp and respite work where an equal percentage was found (Figure 1).

Figure 1: Percentage of students from each higher education institution who have experience of working with a child with Autism



The rationale for the use of this question was that students bring prior knowledge to all learning situations. Within the 27% of St. Mary's and the 17% of MIC students who stated they had other work experience, either instead of or in addition to the options offered in the questionnaire, there were a variety of experiences given. These can be categorised into four groups: day-care worker; family/friend/neighbour with Autism; teaching practice (substitute teaching in these instances); and babysitting or voluntary work.

4.5 Children with Autism in the mainstream primary school

Overall, the majority of students (80%) agreed that children with Autism should be included in mainstream primary school. Only one-fifth (19%) were undecided and 1% disagreed. Frequency

descriptive analysis showed differences between St. Mary's and MIC in response. These differences are presented in Table 1.

Table 1: Responses to 'should children with Autism be included in mainstream primary school?'

Higher Education Institution	St. Mary's & MIC	St. Mary's	MIC
Yes	397 (80%)	93 (96%)	304 (77%)
No	5 (1%)	0 (0%)	5 (1%)
Undecided	92 (19%)	4 (4%)	88 (22%)
Total	494 (100%)	97 (100%)	397 (100%)

- 96% of St. Mary's students agreed children with Autism ought to be included in mainstream primary school compared to 77% of MIC students;
- 22% of MIC students compared to 4% of St. Mary's students were undecided with regard to mainstream primary school for children with Autism;
- 1% of MIC students disagreed that mainstream primary school is suitable for children with Autism.

4.6 Feelings towards teaching a pupil with Autism

There was a response rate of 93% to this question as 462 students responded.

- There were 85 (87%) students from St. Mary's and 377 (92%) students from MIC who responded to question 6;
- There were 12 (13%) St. Mary's students and 133 (33%) MIC students who gave more than one opinion with regard to their feelings towards teaching a pupil with Autism.

Question 6 was an open-ended question asking students about their feelings and a number of categories and keywords emerged when the resulting data from this question were explored. All responses were examined and recurring ideas and topics along with keywords were extracted from the 607 pieces of text. These included topics such as:

- Confidence in teaching ability;
- Anxiety, apprehension and challenges in the classroom with a pupil with Autism;
- The severity of Autism in a pupil;
- The rights of children with Autism to be in mainstream school;
- The benefits of the B.Ed. Special Educational Needs (SEN) course.

Some examples of the students' written responses included:

- "It is a bit daunting and I would be quite unsure in making an approach. Once I have researched it well and know strategies and techniques I will be more comfortable".

- "Pupils with Autism are so intelligent and very enjoyable to work with it would be a great experience".

- "After doing the [SEN] course I would feel confident and capable of teaching a child with Autism".

- "It would depend on the severity of the Autism – I'd feel very happy in the most part".

- "I feel that it is the child's right to be included in our classrooms, equally it is our responsibility as teachers to try and meet their needs to the best of our ability".

- "I feel a lot more informed now than before this SEN course. I would still be nervous and unsure of teaching children with Autism though".

- "It would be a challenge but one that can be dealt with through careful planning".

- "I feel it would be very rewarding".

- "I feel good about the prospect. Students with Autism offer a great deal to the class as a whole".

4.7 Perceived ability to meet the needs of pupils with ASD

This section of the survey (questions 7- 15) explored students' perceived ability with regard to recognising the characteristics of ASD and their perceptions as to whether they could meet the needs of these pupils employing various teaching strategies and skills (taught on the course). All statements were rated on a five-point Likert scale from 'strongly agree' to 'strongly disagree' (Table 2).

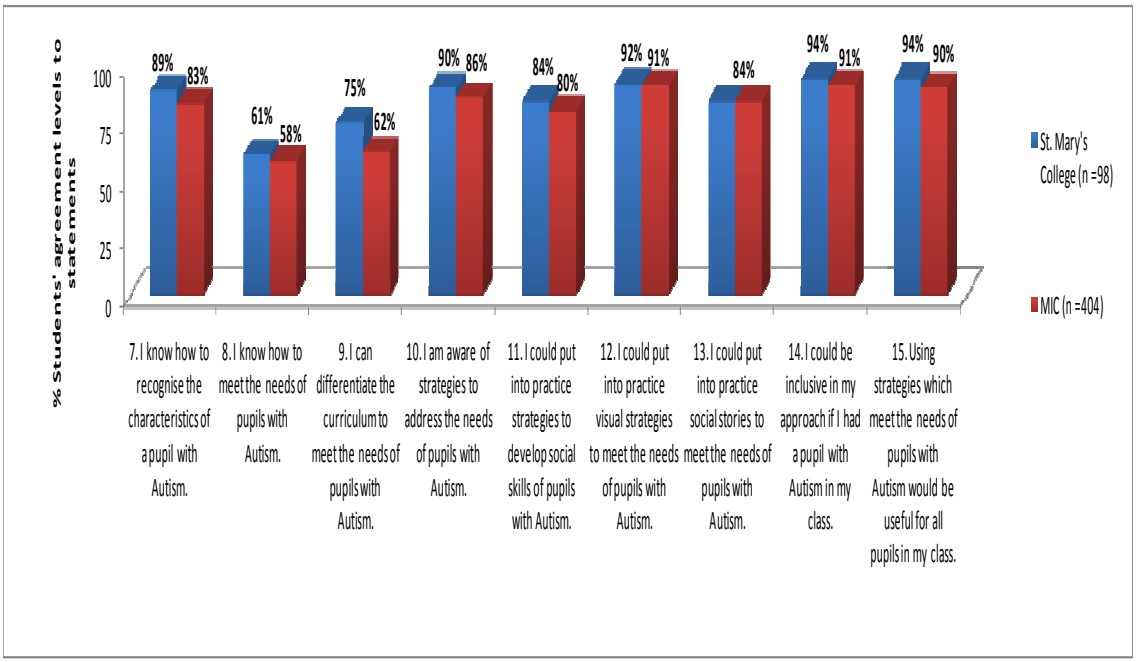
Table 2: Students' (St Mary's and MIC combined) perceived ability to meet the needs of pupils with ASD

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I know how to recognise the characteristics of a pupil with Autism	8%	76%	15%	1%	0%
I know how to meet the needs of pupils with Autism	3%	55.5%	36%	5%	0.5%
I can differentiate the curriculum to meet the needs of pupils with Autism	5%	59%	32%	4%	0%
I am aware of strategies to address the needs of pupils with Autism	10%	76%	12%	2%	0%
I could put into practice strategies to develop social skills of pupils with Autism	10%	70%	18%	2%	0%
I could put into practice visual strategies to meet the needs of pupils with Autism	21%	70%	8%	0%	1%
I could put into practice social stories to meet the needs of pupils with Autism	21%	63%	14%	2%	0%
I could be inclusive in my approach if I had a pupil with Autism in my class	23%	69%	8%	0%	0%
Using the strategies which meet the needs of pupils with Autism would be useful for all pupils in my class	44%	47%	8%	1%	0%

- More than half of the students reported some form of agreement for each statement. This ranged from 58.5% of the students indicating agreement that they know how to meet the needs of pupils with Autism, to 92% of the students indicating agreement that they could be inclusive in their approach if they had a pupil with Autism in their class;
- Almost half (44%) of the students strongly agreed that using the strategies which meet the needs of pupils with Autism would be useful for all pupils in their class;
- Approximately one-third of the students were neutral (i.e. unsure) in their responses to whether they know how to meet the needs of pupils with Autism, and whether they can differentiate the curriculum to meet the needs of pupils with Autism;

Findings that are specific to each Institution are shown in Figure 2.

Figure 2: Students' perceived ability to meet the needs of pupils with ASD (agree/strongly agree)



- For St. Mary's, over three-quarters of the students agreed or strongly agreed with all statements, except question 8;
- For St. Mary's, 94% of the students agreed or strongly agreed that they have the ability to include a child with Autism in the classroom, and also that strategies for children with Autism would be useful to all pupils;
- For St. Mary's, question 8 which related to knowing how to meet the needs of children with Autism, 61% of the students agreed or strongly agreed with this statement;
- For MIC, all questions, except questions 8 and 9, indicated a positive response from 80% of the students, i.e. agreed or strongly agreed;
- For MIC, 91% of the students feel they have the ability to use appropriate visual strategies and have an inclusive approach toward children with Autism in the classroom;
- For MIC, the least favourable responses were for questions 8 and 9, with 58% and 62% of the students (respectively) agreeing or strongly agreeing that they know how to meet the needs and differentiate the curriculum for pupils with Autism.

4.8 Exploration of correlations

Correlations were examined between variables as listed below using Pearson product-moment correlation coefficient. A number of statistically significant correlations were found.

(i) Whether students thought a child with Autism should be included in mainstream primary school <u>and</u> perceived ability to meet the pupils' needs.

Significant correlations were found between students who felt a child with Autism ought to be included in mainstream primary school and questions 8 (r_{495} = 0.137, p = 0.002), 9 (r_{495} = 0.120, p = 0.007), 12 (r_{495} = 0.114, p = 0.011), 14 (r_{495} = 0.180, p = 0.001), and 15 (r_{495} = 0.102, p = 0.023) relating to perceived ability to meet the pupils' needs.

This indicated that students who agree that children with Autism be included in mainstream primary education have a higher perceived ability in the areas addressed by questions 8, 9, 12, 14, and 15.

(ii) Work experience with a child with Autism <u>and</u> perceived ability to meet pupils' needs

Six significant correlations were found between various areas of work experience and perceived ability to meet pupils' needs**:** questions 7 school/teaching practice (r_{489} = 0.130, p = 0.004), 7 other experience (r_{464} = 0.096, p = 0.039), 8 school/teaching practice (r_{488} = 0.940, p = 0.038), 9 school/teaching practice (r_{488} = 0.157, p = 0.001), 11 respite work (r_{462} = 0.114, p = 0.014), and 12 respite work (r_{462} = 0.094, p = 0.043).

These correlations indicate that students who have experience in working with a child with Autism in various areas have higher perceived ability to meet pupils' needs.

(iii) Work experience with a child with Autism <u>and</u> whether a child with Autism should be included in mainstream primary school.

Two significant correlations were found between these two variables in the full sample. A positive correlation was found between students who feel children with Autism should be included in mainstream education and have teaching practice experience (r_{482} = 0.114, p =.012). This indicates that students with teaching practice experience agree a child with Autism should be included in mainstream primary education. However students who quantified their experience as working as an SNA (special needs assistant) [r_{459} = 0.123, p = 0.008], or had voluntary work experience[r_{459} = 0.096, p = 0.039] involving a child with Autism disagreed or were undecided as to whether a children with Autism should be included in mainstream primary education.

4.9 Discussion of questionnaire results.

An acknowledged barrier to inclusion is the feeling of many mainstream teachers that they are ill-equipped to meet the wide range of learning difficulties in today's classrooms (Avramidis *et al.*, 2000 cited in Abbott 2006) It was encouraging therefore to note that overall the majority of students 80 % (St Mary's and MIC) agreed that a pupil with ASD should be included in the mainstream primary school. This may be indicative of their confidence in teaching these pupils. There was a positive correlation between students with school / teaching practice and work experience and their belief that pupils with ASD should be included in mainstream. One of the study's objectives was to ascertain whether student competence in the field of ASD is enhanced as a result of their time spent on school experience and this seems to be the case.

However when asked whether they could be inclusive in their approach with a pupil with ASD 92% of students agreed or strongly agreed. However when asked whether they know how to meet the needs of pupils with ASD, a smaller percentage (58%) agreed or strongly agreed. With regard to perceived ability to differentiate to meet the needs of a pupil with ASD, 64 % responded strongly agree or agree. Differentiation is about meeting pupil need and this is an encouraging response. "The development of inclusive education leads in fact to the application of the principles of differentiation to all pupils whatever their needs" Thomazet (2009). The large percentage of students (92%) who believed they could be inclusive and the smaller percentage (58%) who said they could meet needs, presents an element of contradiction as meeting pupils' needs and being inclusive could be said to be synonymous. This raises, for the researchers perhaps, the issue of agreed broad definitions of inclusion and possible student predispositions with regard to inclusion.

Students were asked how they felt about teaching a pupil with ASD and there were a number of recurring themes in the responses to this open question. Students acknowledged the rights of these pupils to attend a mainstream school. A number of students spoke of feeling nervous and apprehensive, however equal numbers spoke of feeling increased confidence after the SEN course.

Whilst ASD is a medical diagnosis, it is acknowledged by the Task Group Report (DE, 2001, recommendation 2ii) that central to educating an individual with ASD is understanding the nature of the disorder in order to facilitate learning and social inclusion. Teachers, parents and others planning educational programmes for individuals with ASD should have an understanding of ASD (DE, 2001). In order to have an understanding of ASD then it is necessary for students to be able to recognise the characteristics of ASD. The study showed that 84% of students agreed or strongly agreed that

they were able to recognise these characteristics. This is a valuable competence for the following reasons. First, one of the most important issues in the mainstream classroom is the teacher's ability to identify early children with special educational needs. Second, these students would be able to raise a concern about pupils who may be displaying the characteristics of ASD and as a result not only hasten identification but know what interventions may be useful.

Students were asked about their ability to put into practice strategies they had been taught in the areas of social skills, visual strategies and social stories. The responses were 80%, 91% and 84% respectively who strongly agreed or agreed. This was a very encouraging response as this ability to use these strategies with pupils with ASD should make for a supportive effective learning environment for these ASD pupils. The correlations, found as a result of analysis, indicate the value of school / teaching practice and work experience. Those students who had school experience and other work experience with children with Autism reported higher perceived teaching competency levels.

Differences were found between the two institutions with regard to whether children with Autism ought to be included in mainstream primary education. Additionally, differences were found in the degree of perceived teaching competency in three of the nine questions asked in questions 7-15. These differences could be due to the differences in experience between the two groups of students. For example, St Mary's have a four-year BEd degree course and MIC have a three-year degree course. Therefore, at the time the questionnaire was administered, St Mary's students were in year three and had experienced two blocks of school experience totalling 16 weeks, whereas MIC students were in year two and had two weeks of school experience. Additionally, MIC students do not have any input on special educational needs in year 1 (the year preceding participation in the study). St Mary's students have small input in their year 2 (the year preceding participation in the study) on special educational needs. These areas focus on the roles and responsibilities of the teacher under the Code of Practice on the Assessment and Identification of Special Educational Needs (DENI, 1998) and include one session and a seminar on differentiation. It could be argued that this accounts for difference in response from students when asked whether they felt they could differentiate the curriculum for pupils with ASD.

5 Results of the focus groups

Students in the focus groups were drawn from the final year of their programmes (St. Mary's Year 4 and MIC year 3). Student teachers from St. Mary's had, at this stage, completed four eight-week school experience placements. MIC students had completed three two-week teaching practice placements, one five-week placement and one two-week additional educational experience placement. The students interviewed had experience relevant to the study, having come to the end of their Bachelor of Education degree and having also completed their final teaching experience. Two of the study's objectives focused on school experience to try to ascertain whether student competence in the field of ASD is enhanced as a result of their time spent on school experience and how BEd primary students could be helped to develop their teaching in the area of ASD whilst on school experience. All student teachers who participated in the focus groups had experience of teaching pupils with autistic spectrum disorder (ASD); most had experience of children with ASD in mainstream classrooms and a minority had experience in special educational settings. A number of interesting issues emerged from the focus group data, namely: the role of classroom assistant/special needs assistant (SNA); the pupil's adherence to routine; the importance of instructional strategies; and pupil behaviour.

5.1 Classroom Assistant/Special Needs Assistant (SNA)

Most of the students had experience working with a classroom assistant or special needs assistant (SNA) who supported these pupils. Students valued the contribution made by classroom assistants/SNAs and felt that they were often essential to ensuring the child was included in classroom activities, sometimes knowing better than the teacher how to work with the pupil.

> "I feel that the classroom assistant knew more about him and knew more about how to deal with it better than the teacher, but that is maybe because she was always focused on him rather than on the class. She knew exactly what his need or what his problem was or what she should do to calm the situation".

A number of students noted that the teacher also perceived the classroom assistant/SNA as being better able to support the pupil with ASD. Both students and teachers acknowledged the difficulties which arose when a pupil with ASD did not have this support. This raises an issue of how the teacher and classroom assistant/SNA work together.

> "In my class the teacher wouldn't have given the classroom assistant any direction when we were doing work. Like she wouldn't really say we will do this or whatever. It was kind of the CA knew what way to interpret or what way the child needed to listen to instructions or what they had to do for the child to do the work. It wasn't really the teacher saying anything it was more the Classroom assistant knowing this is the work this is what I have to do. It is kind of left to the classroom assistants own opinion nearly".

This student's observation highlights issues which can arise when the teacher does not direct the classroom assistant/SNA in his or her role. Many teachers believe they require additional training in order to work collaboratively with special needs assistants in the classroom (Griffin and Shevlin, 2007). In addition, there is a perception that while teachers often place value on the indispensable role of the assistant, such emphasis appears to be underpinned by teachers' tendency to prioritise their own needs in an instructional role at the expense of the pupil's needs (Emam and Farrell, 2009). Students who observed the autonomy of the classroom assistant saw the problem with this and thought it an issue which should be addressed.

5.2 Routine

Students were acutely aware of the importance of routine for pupils with ASD and how difficulties arose when this routine was disrupted.

> "The routine is a big thing. Like even with big things like PE, like he looked forward to it so much and he knew exactly when it was, what day. And once, when PE had to be cancelled, it really threw him off for the rest of the day. It was nine o'clock in the morning and he was thrown off for the rest of the day, in fact probably for the rest of the week".

Attwood (2007) considers that it is difficult to know whether routine is used as a coping mechanism or is an actual characteristic of the ASD condition. The need for routine can vary from child to child and students were quite aware of this.

> "I had one child in, who constantly needed to know what was happening, where they were going with a timetable and stuff, whereas another child in, was okay without the timetable. How they are so individual".

Many students commented on what they had learned in theory, becoming clear in practice: “the text book suddenly had a meaning”. They also spoke about each child being unique and no two children with autism presenting in the same way. The knowledge that autism is on a spectrum also became very apparent to them as a result of their experience in the classroom, as did the belief that not all children with autism are suitably placed in the mainstream classroom.

The amount of time a pupil with ASD required from the teacher was highlighted by a number of students. One student talked about the strategies that the teacher used to include a girl with ASD in a Year 2 class.

> “She (the teacher) was always asking her questions, bringing her up. And when they were doing group things, she would always be up at the top. And the other children really tried to include her as well”.

> “Listening to the classroom assistant when he was younger, he would have been very difficult to include, but now … he would work at a workstation assisted by them … but the rest of the time he would sit in a group with the other children”.

5.3 Strategies

Students mentioned some of the strategies that they learned from teachers and assistants to help them meet the needs of children with ASD. These included the need for one-to-one support and the use of direct eye contact.

> “I learnt that the child in my class really liked one-to-one learning. Like even if I was talking to the class, like giving instructions and then if I went down, that if I got down and made eye contact, looking directly at him, that it made such a difference. That it was really, he kind of understood more if I was right beside him rather than the whole class. He needed that one-to-one support”.

> “If you are focused and interested, they can speak better to you and they understand that you are paying them the attention that they need”.

The use of routines supported by visual or written timetables for some children was also mentioned as a useful strategy.

> "We had a visual timetable up for music and the teacher didn't come in to take it and she couldn't do anything for the rest of the day".

One student mentioned some of the additional resources schools had in place for children with additional needs.

> "Our school had this really good thing called the 'Golden Room' and it was for special educational needs children. And he would be brought down there every afternoon with different children every day and it was all about relaxation and stuff. But it was also about him being included with the other children and there were lava lamps and stuff and all these things you could attach".

This student explained how she incorporated what she had learned into her own teaching.

> "I think that they like to be part of the class and engaged where possible and they like to feel that they were involved. So whenever I was doing any activities I always tried to make sure they had an input or whenever we were reading through a story I would have given them a focus, like: 'Look for this picture' or to hold something, so they know this is related to what we are doing and I am involved. Anything that kept them engaged and made them feel a part of what we were doing really helped them behaviour-wise. They were distracted and they weren't going off, like they knew they almost had a job to do".

> "I feel that the classroom assistant knew more about him and knew more about how to deal with it better than the teacher but that is maybe because she was always focused on him rather than on the class. She knew exactly what his need or what his problem was or what she should do to calm the situation. Like he had a difficulty were his lead broke and he, under no circumstances, wanted to sharpen the pencil by sharpening it. It broke in his shoe and it couldn't be fixed and he could not understand. And she knew to take him out and let him play football a wee bit or take him in the corridors to look at the displays to override the situation and change his mood. Whereas the teacher just couldn't: 'It is broke and that is it. You just have to sharpen it. That is just what is happening".

5.4 Behaviour

One student mentioned how the classroom assistant could manage the child's behaviour once she was aware of his need.

> "I think you are finding out what it is behind that is causing this behaviour. For a long time the boy had an obsession with glue and letting it dry and sort of picking at it, and it caused him so much frustration that he wanted to do this before his work so she (the classroom assistant) decided that she would let him pick the glue out, do his work and then after that pick the glue again. She sort of got a way around his behaviour".

One student noted the autonomy that the classroom assistant had when interpreting the work to support the child with ASD. Classroom assistants were also recognised as a necessary 'extra pair of hands' who would know what to do in difficult situations when a child's behaviour was challenging or unpredictable.

> "When she (child with ASD) would have a tantrum, she would be shouting out. She was taken away from the rest of the class who were breaking up the lesson because she would get really distressed about small things and it would just take up a lot of time".

> "It was just a minute and he (boy with ASD) wandered off. He needed constant supervision".

Students learned about a range of behaviours exhibited by children with ASD and identified the varying characteristics displayed by different children. Many students said that it was only by seeing and experiencing the characteristic behaviours of pupils' with ASD in the classroom that the theory made sense. One student said she now understood the reasons for tantrums in the ASD pupil, having experienced this at first hand.

Overall the students' school experience had enhanced both their learning and their confidence in teaching a pupil with ASD. They had learned how to implement strategies in addition to those taught in the two institutions and had opportunity to practise strategies learned. In one case a student reported that she had introduced the teacher to the strategy of 'Social Stories ' which the teacher had implemented successfully.

A recurring leitmotif was that of the valuable part played by the classroom assistant. Many students commented on how important the support of these assistants was for the pupil with ASD in mainstream schools although one student commented that in her experience the assistant was supporting the teacher and she felt this mitigated against inclusion.

6 Conclusion and Recommendations

Overall, results indicate that the Bachelor of Education degree programme enables participating St. Mary's and MIC students to feel confident in meeting the needs of pupils with Autistic Spectrum Disorders in mainstream primary schools.

In light of the research findings it would appear that student teachers in both jurisdictions embrace inclusion. Overall, the majority of students (80%) agreed that children with Autism should be included in mainstream primary school.

The project hoped to establish how well prepared BEd primary students feel they are in addressing the needs of pupils with ASD through the teaching element of the BEd course and this question was answered as the study showed that students feel confident in meeting the needs of pupils with Autistic Spectrum Disorders in mainstream primary schools. Additionally they feel competent in their capacity to employ the strategies learned as a result of their degree course and school / teaching experience.

More time made available within the BEd degree courses to develop students' competence further would be useful. Introduction of an element in the BEd degree course which addresses the issues around working with classroom assistants would be pertinent to better equip students in this area, so that they can be prepared to direct the assistant in a way that fosters inclusion. It is important that students are informed about best practice in this area. As a result of the focus group interviews in MIC there is a proposal to set up support groups in MIC for newly qualified teachers. Students in the focus groups found it very useful to talk about their experience in teaching the pupils with ASD and thought they would benefit from support next year as new teachers.

In part, rationale for the research study was to give a steer for future directions for BEd courses. The study has been invaluable in informing tutors who are responsible for the planning and delivery of courses in special educational needs and it is anticipated that as a result of the study there will be modification of these courses.

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Appendix i

DIRECTIONS: Please mark a horizontal line [—] in the appropriate box

MEETING THE NEEDS OF PUPILS WITH AUTISTIC SPECTRUM DISORDERS IN MAINSTREAM PRIMARY SCHOOLS

1. Gender
Female ☐
Male ☐

2. College
St. Mary's University College Belfast ☐
Mary Immaculate College Limerick ☐

3. Age Group 19-21 ☐ 22-24 ☐ 25-30 ☐ 31-35 ☐ 36-40 ☐ 41+ ☐

4. My experience of working with a child with Autism is as follows:

School Experience or Teaching Practice.....	Yes ☐	No ☐	Working as a Special Needs Assistant.....	Yes ☐	No ☐
In summer camps.....	Yes ☐	No ☐	As a voluntary worker	Yes ☐	No ☐
Other.....	Yes ☐	No ☐	Respite work.....	Yes ☐	No ☐

If other please specify here

5. Do you think a child with Autism should be included in the mainstream primary school?

Yes ☐ No ☐ Undecided ☐

6. How do you feel about teaching a pupil with Autism?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I know how to recognise the characteristics of a pupil with Autism.	☐	☐	☐	☐	☐
8. I know how to meet the needs of pupils with Autism.	☐	☐	☐	☐	☐
9. I can differentiate the curriculum to meet the needs of pupils with Autism.	☐	☐	☐	☐	☐
10. I am aware of strategies to address the needs of pupils with Autism.	☐	☐	☐	☐	☐
11. I could put into practice strategies to develop social skills of pupils with Autism.	☐	☐	☐	☐	☐
12. I could put into practice visual strategies to meet the needs of pupils with Autism.	☐	☐	☐	☐	☐
13. I could put into practice social stories to meet the needs of pupils with Autism.	☐	☐	☐	☐	☐
14. I could be inclusive in my approach if I had a pupil with Autism in my class.	☐	☐	☐	☐	☐
15. Using the strategies which meet the needs of pupils with Autism would be useful for all pupils in my class.	☐	☐	☐	☐	☐

Please note that all responses are treated as private and confidential. Thank you for your participation.

Appendix ii

Focus Group Questions

- to ascertain how much BEd primary student competence in the field of ASD is enhanced as a result of their time spent on school experience;
- to investigate how BEd primary students could be helped to develop their teaching in the area of ASD whilst on school experience;

1. What has been your experience, if any, of teaching pupils with SEN on TP?
   - What kinds of disability/SEN did the children have?
   - Did you have a child on the ASD spectrum?

2. For those of you who had a child with ASD, how was the experience?
   - Was the child in mainstream, special unit, class?
   - Did the child have a Classroom Assistant?
   - Do you think the child was included in classroom activities?

3. Did you learn through your school experience about meeting the needs of pupils with ASD in the following areas?
   - strategies
   - working with classroom assistants
   - pupil behaviour
   - social skills

4. In teaching a pupil with ASD, how do you rate the experience?
   - how comfortable were you?
   - were there any positive experiences?
   - what did you find to be most challenging?
   - what was the most valuable thing learned? Examples?

5. How prepared did you feel for this experience of teaching pupils with ASD?
   - Of the college based preparation for teaching pupils with ASD what proved most useful?
   - Did you find you were able to contribute in any way with strategies approaches you learned within your course?
   - If you were to recommend additional course content to be taught in the college what would this be?

6. How confident do you feel about teaching pupils with ASD in the future?