Educating children with autism spectrum disorder within the Primary Years Programme framework: The Latin American perspective

Rebekah Bush
B. Teach., B.Ed., M.Ed.

Abstract

This study explores the education of young children with autism spectrum disorder (ASD) within the framework of the International Baccalaureate (IB) Primary Years Programme (PYP). A mixed methods approach was used, including a literature review, teacher interviews, and classroom observations involving 42 educators across eight IB schools in five Latin American countries. The researcher concluded that due to the extensive range of teaching styles and strategies which may be implemented within the context of the PYP, this model can support the education of young children with autism. The potential barriers related to educating this population of students are largely unrelated to the PYP framework. Furthermore, it was found that despite teachers' perceptions that they lack autism-specific professional development and sufficient knowledge of practical strategies for teaching children with ASD, the majority of teachers had very positive attitudes towards educating students with ASD within the PYP framework. The findings from this small-scale study suggest that further support for teachers of children with ASD—including, professional development related to autism-specific strategies, a coaching model during the implementation phase of classroom interventions, and increased opportunities for collaboration—would increase teacher confidence and competence, and support the optimal development of children with ASD within PYP settings.

Introduction

Inclusive models of education are now widely recognised in the international literature as best practice in teaching children with differing needs and from a range of backgrounds, including individuals with autism spectrum disorder (ASD) (for example, Causton and Theoharis, 2014; Skokut, Robinson, Openden and 2008; Stainback and Stainback,1996). The majority of diverse learning needs can be met in the general classroom setting and, usually, adaptations that are made to meet a specific student's learning needs benefit other students as well.

There is also evidence that mainstreaming children with ASD can mean that teachers face considerable difficulties in managing their special educational needs (SEN). Mahmoud and Farrell (2009) suggest that this may be due to the idiosyncratic difficulties in the social and emotional understanding of individuals with autism. It may also be attributed to teachers having relatively little training or understanding of autism (Sciutto, Richwine, Mentrikoski and Niedzwiecki, 2012).

Skokut et al. (2008) assert that directly addressing the needs of children with ASD in the school context is an essential component of facilitating the success of these students. As diagnoses of ASD become more prevalent world-wide, (Posserud, Lundervold, and Gillberg, 2006; Samms-Vaughan and Franklyn-Banton, 2008; Wilkinson, 2010) the manner in which children with autism are educated within the framework of the International Baccalaureate (IB) Primary Years Programme (PYP) must be examined with due diligence.

This paper provides a summary of a more detailed manuscript (Bush, 2016) which aims to respond to the following questions:

1. What are teachers' perceptions about teaching children with ASD within the PYP model?

2. What strategies do PYP teachers employ when educating children with an ASD?

3. What are the practical implications of current research about the thinking and learning characteristics of children with ASD for schools using the PYP model?

Literature Review

A comprehensive literature review was conducted with a total of 82 articles being reviewed and analyzed. The key themes that were explored included: the nature of ASD, the prevalence of ASD in Latin America, the PYP model, the IB's views with regard to special educational needs, language learning in the PYP, autism and multilingualism, barriers to inclusive education for children with autism, and best practice in educating children with autism. For the complete methodology and literature review, please refer to the original report (Bush, 2016).

The Research Study

Design of the Study

The design of the study was primarily qualitative (Patton, 2003/2005), as the researcher deemed this approach was best suited to answering the proposed research questions. It included in-depth, open-ended interviews, observations and document review. The researcher visited each school for one to two days, depending on the number of participants, to carry out classroom observations and one-to-one

interviews.

The interviews were designed to probe teachers' perceptions, opinions and knowledge of teaching children with autism. Field notes, taken during classroom observations, yielded data regarding observable behaviour, along with descriptions of the context of the observations. Documents collected included school inclusion policies and reports of students enrolled in each area of the school.

Sample

The inclusion criteria for this sample were teachers who educate a child with a diagnosis of ASD or a child who, according to the class teacher and/or school psychologist, exhibits characteristics consistent with a diagnosis of ASD, in a PYP school in Latin America.

IB schools implementing the PYP were identified using the "Find an IB world school" section on the IB website. Specific participants were identified through convenience sampling (those who were available and fit the inclusion criteria) and, on occasion, through snowball sampling (each participant recommended others who might be interested). This was achieved through professional networks and word of mouth.

Setting

The study took place in various classrooms in eight PYP schools located across Latin America, including schools in Peru, Ecuador, Colombia, Venezuela and Chile. Observations took place in the regular class setting during implementation of the program.

Procedures

A combination of teacher interviews and classroom observations was used to obtain data for this study. These interviews and observations were only conducted once informed consent had been given by the school principal and participants.

The researcher visited each school for one to two days, depending on the number of participants, to carry out classroom observations and one-to-one interviews. Interviews were conducted in a private space and participants were able to stop the interview at any point if they felt uncomfortable or did not want to answer further questions. The interviewer is experienced with conducting in-depth interviews, and is fluent in Spanish and English, so interviews were conducted in the language of the participants' choice.

Participants remained anonymous in the research report, and any written information (such as consent forms and interview notes) was stored in a locked cabinet in the researcher's personal office. Although consent forms included school and participants' names, they were not matched with interview notes or classroom observations for anonymity purposes.

Instruments

Teacher interviews

The aim of the teacher interviews was to gather information about participating schools and teachers and to elicit teacher perceptions related to educating children with ASD within the PYP framework. It comprised 30 questions, both closed and open-ended.

Classroom observations

The researcher (and, at times, a second observer) carried out a series of classroom observations, endeavoring to compare teachers' actual classroom practices to their stated practice as described in the teacher interviews, and to answer the following

research question: *What strategies do PYP teachers employ when educating children with an ASD?* Each class observation lasted forty to fifty minutes, dependent upon the activity that was taking place. Some observations lasted longer, although no data was collected beyond fifty minutes. In order to provide a framework for data collection, the researcher developed a simple observation format which can be found in *Appendix D: Classroom observation format* of the complete report (Bush, 2016).

Results

On 17 occasions (40%), participants took part in the interview but were not observed in class, and on 2 occasions (5%), participants' classes were observed but interviews were not possible. In the two latter instances, the researcher was able to ask the participants questions related to their professional details. The remainder of the participants (55% of the sample) took part in both the interview and the class observation. The results from the interviews and observations are presented below.

Results from the teacher interviews

Characteristics- Participants

The 42 educators who participated in the interviews, and/or who were observed teaching in class, represent a diverse sample of educators. They were all employed on either a full or part-time basis at a PYP school located in Latin America and were recruited for this study on a voluntary basis. They were made up mostly of female teachers (90%), and only 4 male participants. University-trained teachers made up the majority of participants (30 of 42); however, educators who don't traditionally fall under the category of "teachers" (such as psychologists, social workers or untrained support teachers) were also included as participants, providing they worked face-to-face with students.

Teaching experience ranged from one teacher who had been teaching for less than

a year to ten teachers who had been teaching for more than 20 years. PYP experience ranged from six teachers who has been working in a PYP setting for less than a year to three who had 11 to 15 years' experience in a PYP setting. With regard to years of experience working with students with ASD, 24 percent of the participants had less than one year of experience, while two teachers had worked with this population of students for 16 to 20 years.

Each school included in the study had between one and ten participants, and each participant had at least one child in their class with a diagnosis of ASD or a child who displayed symptoms consistent with a diagnosis of ASD, as observed by the class teacher and/or school psychologist. Opening the study to the latter group of teachers, those who did not have a student with a diagnosis of ASD, was considered important by the researcher due to the perceived trend of later diagnosis in Latin America and the lack of research regarding prevalence rates in the region. These factors indicated the likelihood of there being undiagnosed students with autism in PYP schools.

It should be noted, however, that all of the children identified by teachers and/or psychologists as meeting the above criteria had already received an external diagnosis of ASD or Asperger's Syndrome, except for two. One of the participants who taught one of these undiagnosed children also had another child in her class who had a formal diagnosis of ASD. Although the other teacher had no students with a formal diagnosis of ASD in her class, she was included in the study due to the school psychologists identifying a student in her class who displayed symptoms consistent with a diagnosis of autism. Furthermore, both the interview and classroom observation data she provided offer insight into strategies that teachers could implement with students who present with characteristics of ASD, whether diagnosed or not.

Students were not considered study participants during any phase of the study, and

during classroom observations, the identification of any student/s with autism was not disclosed to the observer, as the focus of the study was on teacher practice within a PYP classroom that included students with ASD, not practice specifically related to any individual student. The researcher's presence in the class was, at times, not explained to students at all, and on other occasions, the researcher was described to students as a visitor from another PYP school.

Characteristics- Classrooms

Between them, participants taught across all grade levels of the PYP, with 31 percent of participants teaching across three or more grade levels (N=13) and the remaining participants teaching just one or two consecutive grades. Class sizes ranged from 16 to 31 students and all teachers interviewed taught at least one child with a diagnosis of autism, or at least one child who displayed behaviours consistent with a diagnosis of autism as identified by the class teacher and/or school psychologist. One class had seven children with autism. In various cases, the researcher discovered that the class teacher was not aware of the child's diagnosis until the study began, as this information was kept from teachers in two of the participating schools in order to avoid stigmatisation. Personal details of students with autism were never disclosed to the researcher, other than a diagnosis related to autism, any comorbid diagnosis, and/or information related to presentation of skills in the children with ASD.

Of the participants teaching one or more students with an actual diagnosis of ASD (N=41), only three reported being involved in the implementation of an Individual Education Program (IEP). In some cases the school did not use IEPs, in others the child's needs were not considered significant enough to warrant an IEP, and in yet others teachers were not aware of what an IEP was, even if there was one in existence for a student in their class (designed by the SEN teacher and/or psychologist).

Teachers' perceptions of the PYP framework for educating children with autism

During the teacher interviews, most participants responded that there were various benefits to educating children with ASD within the PYP framework, as well as various barriers. Within the wide range of responses from participants when asked which characteristics of the PYP framework they believed to be useful in supporting the education of young children with ASD, the inclusive educational model came up most frequently (N=15). The IB learner profile attributes were the next most frequent response (N=13), followed by student-directed learning (N=11), collaborative work with peers (N=10), the IB attitudes (N=7), and the inquiry process (N=5). The constructivist approach, the collaborative approach, the transdisciplinary nature of the PYP, the IB approaches to learning skills, and the PYP Units of Inquiry were each noted as beneficial by two participants, while the use of learning centers, the model of internationalism, the IB community of learners and the PYP's focus on the social-emotional development of students were each mentioned by one participant.

In addition to the above-mentioned characteristics of the PYP perceived by respondents as useful in the education of young children with autism were various perceived barriers, with collaborative work with peers mentioned most frequently (N=17). This was followed by the inquiry process (N=10), student-directed learning (N=9), compulsory additional language instruction (N=6), high academic expectations (N=4), the IB learner profile attributes (N=3), student oral presentations (N=2) and teacher-directed Units of Inquiry (N=1).

Some of the characteristics of the PYP framework that were viewed as challenges to the education of children with ASD by various participants were also viewed as useful for supporting the education of this population of children by others. There were contrary opinions within the group regarding student-directed learning, collaborative work with peers and the inquiry process. In the case of two of the characteristics, the *same* participants found them to be both a support *and* a barrier, with two participants viewing the inquiry cycle as both a support and a barrier, and

four participants opining that collaborative work with peers was both a support and a barrier.

Figure 1 shows an overview of teachers' perceptions as to which characteristics of the PYP were supports and/or barriers to the education of students with autism.

Teacher perceptions of PYP characteristics being a support and/ or a barrier
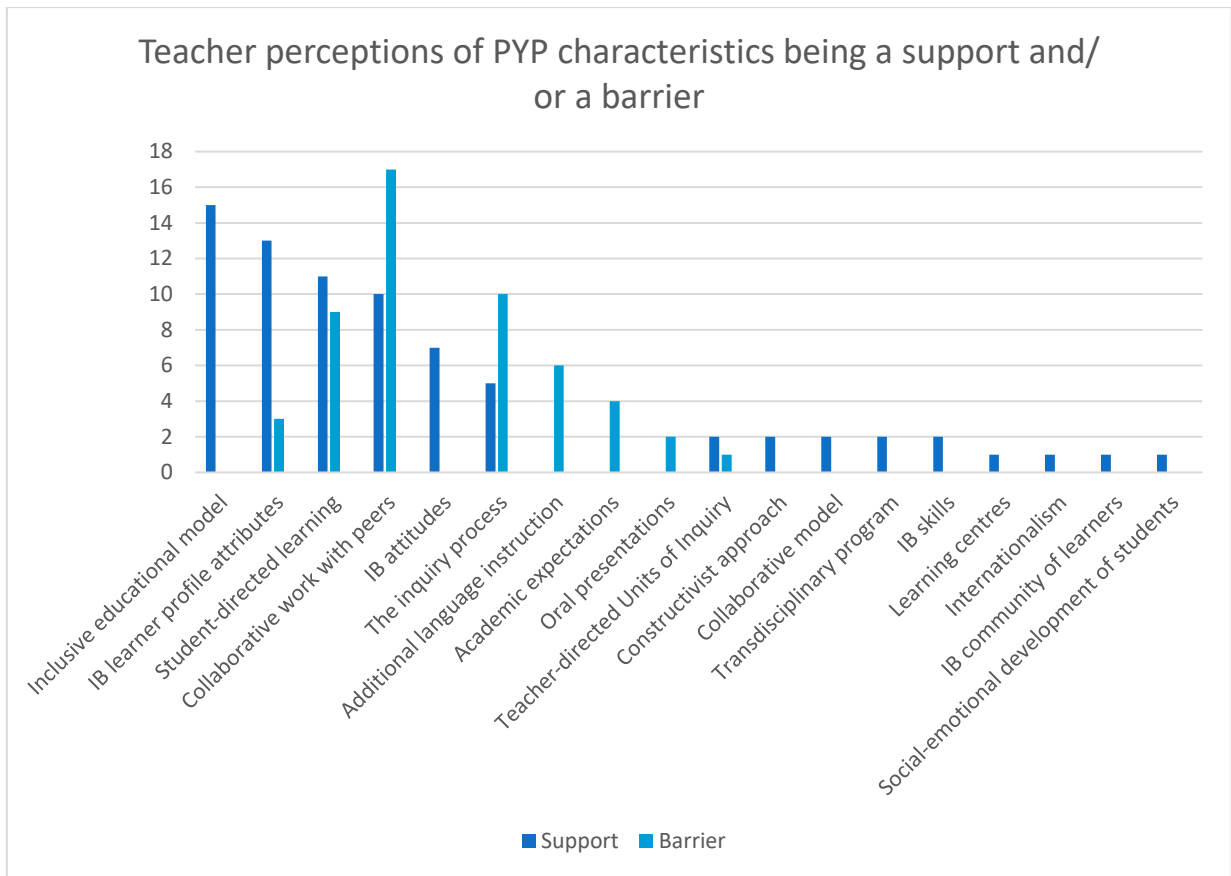
Figure 1: Perceived barriers and supports within the PYP model

Teachers' perceptions of barriers related to educating children with autism

When asked if they perceived any barriers to educating children with autism that were not necessarily related to the PYP framework, educators gave a wide range of responses, with the most frequent response being a lack of teacher training related to ASD (N=9). The level of support required by the student/s with autism was the next most frequent response (N=8), followed by social skills deficits and sensory-processing issues (each noted by seven respondents), then outdoor play time (N=5)

and a lack of support and collaboration from their schools (N=5). A lack of resources in the school, a lack of SEN expertise in the school and unexpected changes in the routine were each listed as barriers by four participants, and peer perceptions of students with ASD, adaptation of content and materials, student misunderstandings of colloquialisms (such as "You are on fire today" or "Go nuts"), and student time management issues were each cited by three participants.

A lack of consistency across classes, non-participatory student behavior, challenging parents, an inability to lose graciously, unpredictable moods and behaviours, obsessions, inflexible thinking, large class sizes and noisy classroom settings were each considered barriers by two participants. Other challenges mentioned by participants included student refusal to do homework, late diagnosis of autism, student anxiety, teacher stress, delayed development in gross motor skills, inability to wait one's turn and difficulties with attention span (N=1). These perceptions are illustrated in *Figure 2*.
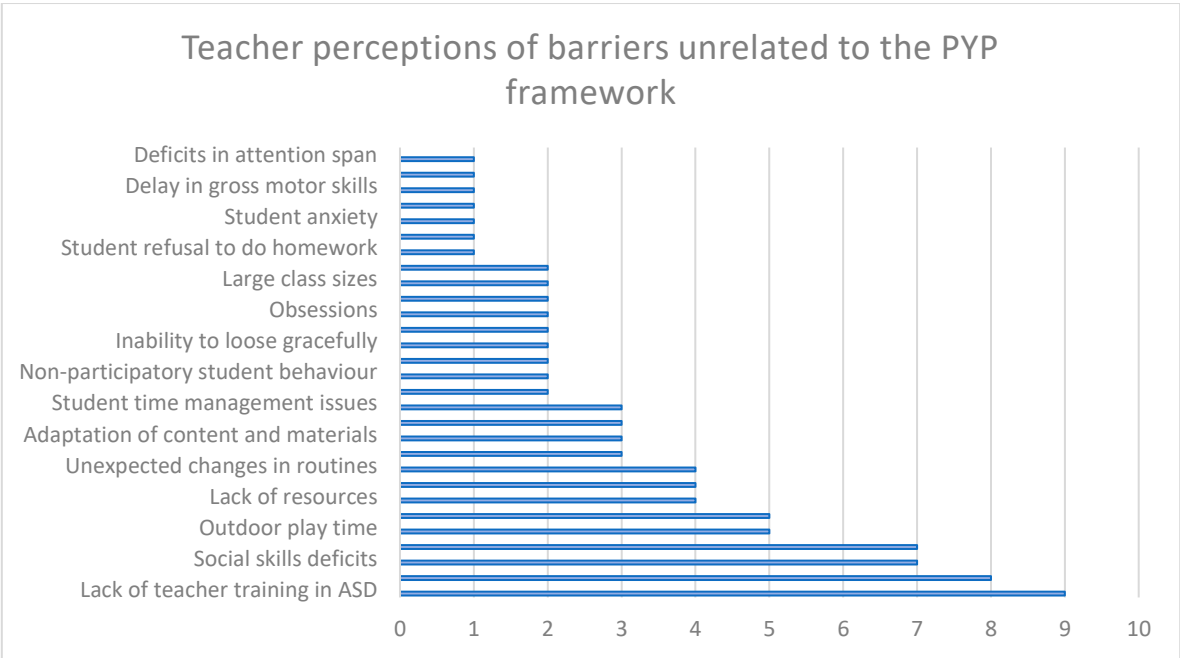
Figure 2: Teacher perceptions of barriers unrelated to the PYP framework

Classroom practice

Teachers were asked if they provided any differentiated learning engagements and if they utilised any differentiated assessments as a result of having a child with autism in their class. 14 of the 40 educators interviewed reported that they differentiated both learning engagements and assessments for their students with autism (or, in certain cases, for various children in the class). Ten differentiated only learning engagements, while five differentiated only assessments. Of those teachers who indicated that they only differentiated learning engagements but not assessments, a number of them expressed that they were unclear about what differentiated assessment would look like in practice. On six occasions teachers reported that they did not differentiate either learning engagements or assessments, and on five occasions teacher responses to this question were unclear.

Eight participants specified the provision of differentiated objectives for certain students, explaining that they differentiated report cards for any students with an identified SEN and a working IEP (as outlined in the SEN policies of some schools involved in the current study). Two participants, from different school settings, were emphatic about the point that differentiation should not just be related to students with SEN or those with an IEP but to *all* students, with one sharing her perception that many teachers need to adjust their mindset and look at every child in the class as an individual.

The next interview question asked teachers to describe any strategies or techniques that they used specifically with their student/s with autism. Participants provided a myriad of responses which included many examples of differentiated practices. These responses were from participants who, in the previous line of questioning, claimed that they differentiated learning engagements and/or assessments, as well as from those participants who said they did *not* differentiate learning engagements and/or assessments. The inconsistencies in responses from the latter group may be

attributed to a lack of understanding related to what constitutes differentiated practice or a lack of confidence in their ability to provide high-quality differentiated learning engagements.

Of the strategies and techniques employed to teach children with autism, sensory supports was the most prevalent response (N=22), and participants were able to provide many examples of different types of sensory supports that they used in class. A collaborative approach, which involved the teacher working in conjunction with others (for example, the student's parents or other professionals involved in the case such as an Occupational Therapist or Psychologist), was cited by 21 participants, followed by the use of visual supports (N=18). 16 participants listed one-to-one support for students as a strategy in use, while the provision of structure was deemed important by 14 participants. Modification of tasks and resources was listed by 13 participants, followed by peer modelling (N=11), the technique of self-assessment (N=8), adaptation of the physical environment (N=7), verbal prompting (N=5) and explicit instruction (N=4). The following strategies were each mentioned by three participants: student choice, obsessions, lesson pacing, and monitoring student frustration levels. Physical prompting, and giving positive verbal feedback were each suggested by two participants. Social skills support, a differentiated admissions process, ignoring negative behaviours, administration of medication and/or educating peers about autism were each cited by one participant.

Figure 3 illustrates strategies and techniques that teachers believed they used most commonly in their classrooms.
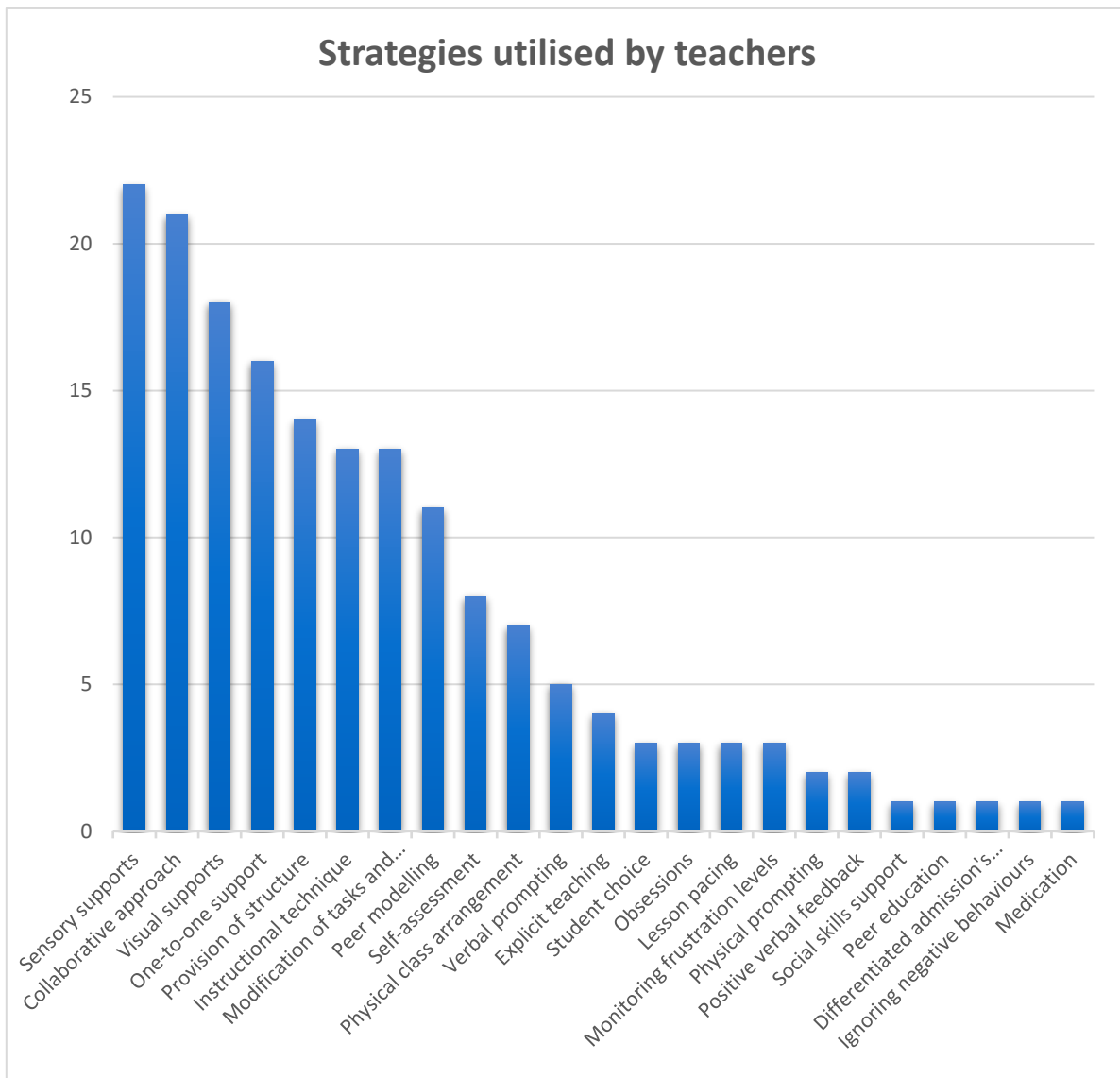
Figure 3: Strategies utilised by teachers who have a student with autism in their class

The next interview question asked teachers about the motivational techniques they used on a regular basis with their students. 17 participants reported the use of tangible rewards (such as rewarding students with stickers or sweets) to motivate students, showing this to be by far the most widely-used technique. Other techniques mentioned during the interviews were public recognition for students (N=8), positive reinforcement and praise (N=7), the use of games (N=7), and the use of work

contracts or agreements (a joint agreement between a student and teacher which specifies goals and consequences) (N=5). Three participants noted that they used negative reinforcement to motivate students, while two participants described their use of student obsessions (such as allowing a student to manipulate a particular object or participate in a specific preferred activity once the desired behaviour or activity has been completed). Other techniques, each mentioned by one participant, included student choice, use of stories and use of jokes.

Teachers' final thoughts

Teachers were asked if there were any other points related to educating children with autism within the PYP framework that they had not yet had a chance to discuss but would like to add. 13 participants reiterated their positive experiences related to working within the PYP framework, commenting on characteristics of the programme such as its flexibility, transparency, and inclusivity. One participant described how she had previously worked in a school with a more traditional approach to instruction. Upon reflection, she could see that she had used a lot of PYP methodology even though she did not know about the PYP at the time, as it represented best educational practice for her (for example, being aware of what was most relevant in students' lives, providing hands-on, active experiences for students and so on). One participant summarized her perspective on educating children with autism within the PYP framework as follows: "Despite the challenges of group work and the individual inquiries, I find [the PYP is] a great programme for educating children with autism, but [I] think it may be more difficult for older students where expectations for inquiry and second-language performance are higher". Another suggested that the PYP helped many students, not just students with ASD. She reiterated her opinion that the focus on learning, inquiry and the process of learning, as opposed to a focus on content, was the strength of the programme. As she explained: "I feel that I can help students like this better in the PYP than *before* the PYP. I am proud of what [my] school is doing and glad to have my own children enrolled here."

Seven participants restated their perspective on the importance of in-service professional development for teachers, specifically related to autism, with three highlighting their desire for more practical strategies. One of these teachers suggested that the IB extend their SEN booklet to include more strategies for working with students with ASD. A further two participants raised implications for teacher-preparation courses at university level, claiming that courses didn't adequately prepare teachers to work with students with specific SEN. One of these participants indicated that, due to this, many teachers lacked confidence in their teaching ability.

Seven participants closed the interview by noting their positive experiences related to having a child with ASD in their class, with comments such as follows:

> *"Amazing!   Amazing!   What an experience!"*
>
> *"It is very enriching to have a child with ASD in the class. I love to work with him. He is a blessing."*
>
> *"It's a nice challenge having him in my class. [I] feel good seeing the benefits for him."*
>
> *"I am happy to have [a student with autism] in my class."*
>
> *"I adore him and love to have him in the class."*
>
> *"[It] is a nice experience, motivating him to grow, looking for different methodologies."*

Four participants claimed that they noticed no difference between their students with autism and their typically-developing peers, and didn't feel they needed to make specific changes for their students with autism.

Three participants once again highlighted the need for a collaborative approach

when educating students with ASD, two participants pointed out the important role that a teacher plays in the education of children with ASD, and one participant suggested that teachers need more in-class support for their students with autism.

<u>*Results from the classroom observations*</u>

In total, the researcher carried out observations in 25 PYP classrooms across the eight participating schools in order to compare actual teaching practice to teacher perceptions as ascertained through the interviews, with a particular view to identifying strategies that were in place in classrooms. Although the classrooms observed included at least one student with ASD (or, in one case, a student who displayed characteristics consistent with a diagnosis of ASD) observers were not made aware of who these students were at any point during the observations.

During 40 percent of the observations (10 out of 25), a second observer was obtained for reliability purposes and this inter-observer reliability was measured by comparing completed checklists after observations had taken place. It was noted that the researcher and second observer recorded the same data on the observation format on 75 percent of occasions. For purposes of consistency, the results reported herein were derived from the researcher's data rather from than that of the second observer. The issues with second-observer reliability will be discussed briefly in the "Limitations of the current study" section of this paper.

Clarity of lesson objectives

The first checklist item related to the clarity of lesson objectives, with the researcher seeking to ascertain if lesson objectives were clear to both the teacher and the students. The judgement on whether or not objectives were clear was made by looking for indications of a statement of objective (such as an objective written on the whiteboard or stated by the teacher) and, on occasion, asking students what they were learning. It was found that in most cases (80 percent), lesson objectives were

clear to both the teacher and the students.

Grouping strategies

The next checklist item aimed to quantify the range of grouping strategies that teachers use in their classrooms, with the options of whole-class, small-group and individual work being noted on the checklist. It was found that 36 percent of the teachers observed (N=9) used only one grouping strategy during the observation period, 52 percent of teachers used two grouping strategies and 12 percent used three grouping strategies. The most commonly observed grouping strategy was whole-class grouping, which was observed in 22 classrooms, representing 88 percent of the sample. Children worked individually in 13 of the classrooms, and children worked in small groups in 9 of the 25 classrooms observed.

Classroom resources

The next checklist item identified the range of resources used in each classroom. Resources included in the checklist were: manipulatives, information technology, visual supports, books and other resources. After reading the early intervention literature, the researcher had hypothesized that the use of a wide range of resources might make it easier for teachers to provide an inclusive environment, which would meet the needs of a variety of students. The use of visual supports in the education of children with autism was also a recurrent theme in the literature. Furthermore, the IB's *Standard C3: Teaching and learning* (International Baccalaureate Organization, 2014) includes a point regarding the incorporation of a range of resources (including information technologies) in the classroom, hence this item was included in the checklist.

Observations showed that 40 percent of the participants (N=10) used some type of visual support in class and the same number of teachers used resources which were not included in the checklist, with paper and pencils being the most widely used

resources. 36 percent of teachers (N=9) provided hands-on resources to students, although in one class, only one student was permitted manipulatives despite various other students having a readily observable need for this type of support. Books and information technology were observed being used in six classes each, which represents 24 percent of teachers using each of these resources.

Methodology

The next two points on the checklist looked at the instructional delivery method of the main body of the observed lessons, along with teaching strategies implemented. Delivery method was divided into the following items: teacher-directed, student-led, inquiry-based and other. This item was included on the checklist, as the notion of students being responsible for their learning and students engaging in inquiry-based learning is also included in the IB's *Standard C3: Teaching and learning.* The teacher strategies specifically featured in the checklist included teacher demonstration, student demonstration, explanation, differentiation of tasks and/or materials, assessment for learning techniques, sensory supports, verbal prompting, visual prompting, physical prompting, use of a shadow, direct instruction, Applied Behaviour Analysis and social stories. A *range* of items was included in the checklist because the IB's *Standard C3: Teaching and learning* includes a point related to teachers using a range and variety of strategies. The *specific* strategies included were deemed relevant by the researcher, as they were strategies which were featured most heavily in the autism literature.

It was found that the majority of teachers (N=23) use teacher-directed instruction for at least part of their class. 13 teachers used *only* teacher-directed instruction throughout the observed lesson, five teachers had teacher-directed instruction *and* an inquiry-based component to their lessons, while a further three teachers included a student-led component in their teacher-directed lesson.

96 percent of teachers observed (N=24) used the strategy of verbal explanation, proving this to be the most widely-utilised strategy. This was followed by verbal prompting, which was observed in 84 percent of classrooms. 64 percent of teachers (N=16) were observed demonstrating skills to students, while other forms of visual prompting were provided by 13 teachers. 48 percent of teachers (N=12) were observed implementing Assessment for Learning (AFL) strategies; ten teachers used differentiation techniques during the observation period; 9 teachers had a student demonstrate a skill to the other students; 5 teachers gave students sensory supports; in 4 cases a "shadow" was employed to support individual students; direct instruction and physical prompting were each used by 3 teachers; and social stories were observed being used by two teachers. The use of Applied Behavior Analysis (ABA) was not seen during any of the observations.

Results related to teacher strategies are shown in Figure 4.
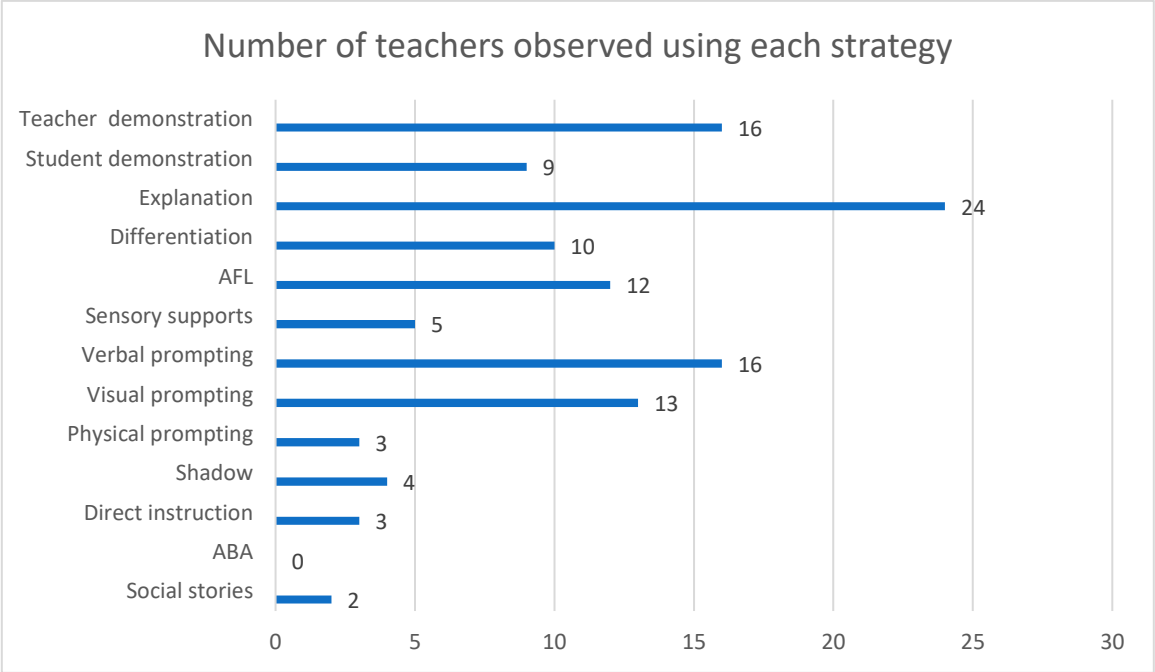
Figure 4: Teaching strategies observed

Behaviour management and motivational techniques

Behaviour management strategies were observed so that, if needed, the researcher had another variable with which to compare teacher practice. It was believed that if any teachers lacked basic classroom management skills, it would be less likely that they would have the necessary tools to include students with differing needs in their class.

Positive feedback was the most commonly used behaviour management strategy, with 80 percent of teachers (N=20) giving students positive feedback. Other strategies observed included good organisational strategies (N=18), preventative behaviour management techniques (N=13), reward systems and other motivational techniques (N=6).

Discussion

The following section of this paper discusses the key findings of the study. It also includes a comparison of this study to others of its kind, a discussion of the study's limitations, suggestions for future research, and implications of the current study.

Discussion

<u>Efficacy of the PYP model in the education of children with ASD</u>

During the current study, both the literature review and the teacher interviews spoke to the efficacy of the PYP framework in supporting an inclusive classroom setting for children with autism. The literature regarding the PYP clearly demonstrated that an eclectic range of teaching styles and strategies, best suited to the needs of individual students, may be implemented within the context of the PYP. Likewise, teacher

perceptions, as explored during the interviews, concurred with the notion that the PYP model consists of a wide range of characteristics which are useful in supporting teachers as they educate students with autism. Of the wide range of characteristics participants mentioned (as shown in Figure 1), the inclusive model of education was the most prominent, which is in accordance with current literature related to best practice.

Despite the generally positive findings, the ambiguity of teacher responses regarding supports and barriers related to the PYP model merit further discussion. The particular characteristics of the PYP which were revealed to be areas of contention due to the fact that some participants named them as both barriers *and* supports included student-directed learning, the inquiry process and collaborative work with peers. Given the very nature of ASD as described in the literature, it is no surprise that contradictory opinions about these characteristics emerged.

Harper, Symon and Frea (2008) describe an over-reliance on routines and a need for predictability which may pose issues for students with autism during the inquiry process, a process which typically involves student-directed and open-ended learning engagements. It stands to reason that students with autism may be more comfortable during teacher-directed, highly-structured learning engagements. Students with communication deficits may also experience challenges with posing questions for inquiry if a developmentally-appropriate level of structure is not provided for them.

The inquiry-based model presents some significant benefits for students who present on the autism spectrum, however depending on each students' individual profile, it may be necessary to build a considerable amount of structure into each step of the inquiry to ensure the student can benefit from the full potential of the Unit. This structure may then be decreased as individual students become more comfortable with the model. Units of Inquiry which allow for student choice in the

inquiry questions are more likely to be successful for students with autism due to increased levels of motivation when investigating topics of interest. Furthermore, because of the PYP's focus on family involvement in the programme, parents often also support students with inquiry skills at home. For both students who are typically-developing and those with autism, this collaborative approach to education (the school and family working towards common goals) is inarguably beneficial.

The social skills deficits of children with autism are also well-documented, leading to the conclusion that the regular, collaborative group work expected as part of the PYP could potentially pose significant problems for children who do not have the social and/or communication skills to contribute in an appropriate manner. Once again, a certain level of support may be required to prepare students with ASD for such a challenge.

Although seemingly ambivalent, the two interview participants who named the inquiry process as both a support and a barrier in the education of children with autism, and the four teachers who named collaborative work with peers as both a support and a barrier, have drawn attention to an important notion: these characteristics of the program *are* barriers to educating children with ASD as they are directly linked to two of the typical core deficits of individuals with autism (that is, an over-reliance on routines and structure, and challenges related to social skills). However, giving children regular, *supported* opportunities to participate in the types of activities which directly address the core deficits of autism is essential to their success (Skokut et al., 2008) hence they are also supports.

At times students may require additional resources, personnel support and/or significant program modifications, but as discussed, differentiated teaching and learning fits well within the boundaries of the PYP and supports the IB's claim that "the PYP represents an approach to teaching that is broad and inclusive" (International Baccalaureate, 2009a, p. 58). It must be noted that in order for this

model to be truly successful for students with ASD, it's imperative that teachers are well-educated and well-supported by all involved parties (Ripley, 1997).

The results from this study suggest that without sufficient support for teachers, inquiry based approaches or educational models which potentially involve a significant amount of collaborative work with peers, may not always be the best, most beneficial frameworks for students on the spectrum. Teacher support is imperative. This leads to the next point of discussion, the provision of support for teachers.

Provision of support for teachers of students with autism

As noted in the review of the literature, Sciutto et al. (2012) believe that educating students with autism requires well-prepared teachers who bring expertise and confidence into their classroom practice. However, teacher preparation programs rarely prepare teachers for the inevitability of academically diverse student populations (Tomlinson, 2014) and, furthermore, no one teacher can have the specialised knowledge that benefits *every* type of student (Tomlinson and Demirsky, 2000).

Despite the study participants being, in general, a knowledgeable, well-educated group of professionals, various teachers interviewed during the course of the study did not express the confidence deemed necessary by Sciutto et al., a sentiment which was reiterated during the process of the current study by numerous school leaders (via email) *before* the study commenced. This naturally leads to a discussion about the type of support school management should provide teachers in order to best educate their students with ASD, including professional development, coaching teachers through the implementation phase of new strategies and implementing a truly collaborative approach.

Of the 42 participants interviewed, 13 were university-trained Special Education teachers, and six of those teachers had also received autism-specific professional development. A further five of the participants had received autism-specific professional development, and the remaining 24 had neither training in Special Education nor autism. Although each case of autism is distinct, the literature outlines a set of learning characteristics which are typically present in children with ASD and which may be different to the characteristics of children with other SEN. Hence autism-specific training is very beneficial to teachers working with this population of students.

Knowledge of these specific characteristics and awareness of best practice related to addressing them may help educators to identify the best intervention and education options for children. Various participants offered the compelling argument that their teaching practice could be improved if they received autism-specific teacher training with a focus on practical strategies that enhance inclusion for this population of students.

Although increasing autism-specific professional development opportunities for teachers would be a manageable goal for schools (for example, contracting an autism specialist to train staff on a regular basis), teacher interviews and observations provided evidence of some discrepancies between what teachers claim they do and their actual classroom practice, with teacher interview responses aligning better with the literature than teaching practices observed in the classrooms. Although 22 of the interview participants claimed to implement strategies which offer sensory support for their students, only five were observed actually using sensory supports in their classroom practice during observations. 18 respondents said that they use visual supports with their students with autism, however only 10 were observed using them during the observation period. In contrast, almost all the teachers observed used the strategy of verbal explanation (with no visual component).

The evidence of teacher knowledge of strategies demonstrated during interviews compared to actual classroom practice suggests that various teachers had a good understanding of what best practice for children with autism in the PYP would look like, although they were not entirely successful during the implementation phase and could benefit from more intensive support.

Gulamhussein (2013) cites Bush (1984) and Truesdale (2003), who claim that when professional development describes a skill or strategy to teachers, only 10 percent can transfer it into their practice; however, when teachers are coached through the implementation phase, 95 percent are able to transfer the skill. If teachers were to receive support throughout the implementation phase, it may help increase their expertise, and therefore their chances of success and ultimately their confidence.

The notion of coaching and learning communities leads to a brief discussion of the collaborative approach, which is very well documented in the SEN literature and was also raised by various participants during the teacher interviews. A collaborative approach to educating children with ASD not only benefits the student but also provides additional support for the teacher.

In this study, there were various clear examples where the collaborative approach was being implemented and other clear examples where it was not. The researcher suggests that in the latter case, a potential barrier which may affect student outcomes was created. In two of the schools that participated in the study, the researcher discovered that teachers were not aware of their student's diagnosis of autism until they were identified by their managers as potential study participants. Similarly, on a small number of occasions, it was found that students had IEPs but teachers had not been made aware of these documents, which had been developed by the school psychologists or SEN department. Upon closer examination, it was

found that in all above-mentioned cases, the purpose of this information being withheld from teachers was to maintain student confidentiality and to avoid the labelling and stigmatization of students.

Although confidentiality for students and their families remains a key ethical issue in education, there is compelling evidence of the benefits of a collaborative approach to teaching *any* student with SEN, where the class teachers, specialist teachers, paraprofessionals (such as psychologists and occupational therapists, employed by the school or externally) and parents work together in the best interest of the student. Involving these key people in details regarding diagnosis, reporting, supports and therapies being received externally, and especially students' individual goals, should not be viewed as a breach of confidentiality but rather as a right of the student. The decision to withhold information from key people who are involved in working with a student doesn't represent a collaborative model and, therefore, could be a potential barrier to students reaching their full potential.

Tomlinson and Demirsky (2000) recommend that school leaders ensure large blocks of time for teacher and specialist collaboration in order to maximize the efforts of both the teacher and specialists. Although confidentiality continues to be a key concern in any school setting and should be maintained within the circle of those working directly with the child, it is only through a truly collaborative approach that students with ASD *and* their teachers can be best supported.

Comparison with other studies

There are numerous studies which address best practice with regard to educating children with autism, and the IB has various publications which describe their views on teaching children with SEN within the PYP; however, this study is unique in that it looks specifically at educating children with ASD within the PYP framework. The focus on teacher perspectives is also noteworthy. As teachers are the ones who are

responsible for programme implementation, it is imperative that school leaders are aware of what teachers perceive as barriers in order to offer adequate support to combat such barriers. Teachers' positive views toward inclusion are crucial to successful implementation of inclusive programs (Avramidis, Bayliss and Burden in Huang and Diamond, 2009).

Although their study was not carried out in the context of the PYP, Mahmoud and Farrell (2009) analysed teacher tensions related to having children with ASD in mainstream classrooms and found that at times teachers could face considerable challenges related to educating students with autism. The current study, similarly, found that teachers identified a wide range of barriers to educating children with autism.

Limitations of the current study

Although this small-scale study has generated some interesting findings, there are a number of limitations which need to be acknowledged. These limitations include the small sample of participants, time restrictions placed upon the researcher, unforeseen circumstances, inter-observer reliability, a lack of accuracy in quantifying the use of strategies and a lack of current research related to the benefits and challenges associated with educating students with ASD within inquiry-based models of education.

Firstly, due to the researcher recruiting only a relatively small sample of participants (42 educators from eight schools from five different Latin American countries), statistics obtained may not accurately reflect current practice in the wider population of Latin America. Data collected reflects just 40 teachers' opinions regarding educating children with autism within the PYP and observations carried out identified trends amongst a group of just 25 teachers. A larger sample during both the interviews and observations would allow for greater generalisability when interpreting the results and could potentially offer more valuable insight into PYP

teacher's perceptions.

Secondly, time restrictions placed upon the researcher by external parties meant that only a limited number of observations and interviews could take place. Due to her status as a full-time teacher and her school's policy on staff leave, she could only afford a maximum of two days in each school. Furthermore, in order to increase participant numbers to gain a broader perspective, the researcher only had time to observe each teacher once, decreasing opportunities to produce valid findings about individual teacher practice. Time restrictions also meant that, when unforeseen circumstances prevailed, the researcher could not carry out observations for every teacher interviewed, or interviews for every class observed, as originally planned.

Unforeseen circumstances which contributed to study limitations included political unrest in one country and visa complications in another. While at one school, located in an area where political unrest was prevalent, the study observation criterion of observing the teachers implementing the regular program in their regular classroom was impossible due to less than four percent of the student population attending school on the day the observations were scheduled. The 11 students who attended were all placed in a classroom together for spontaneous activities; hence, no observations took place in that setting. On another occasion, the researcher was denied entry to a flight due to visa complications and was unable to perform interviews or observations in that school or country.

Although data collected by the researcher and the inter-observers was consistent for the majority of the time, as determined through comparing checklist responses for each shared observation then quantifying the percentage of like responses, it is important to mention this limitation of the study. After discussions with the inter-observers, the researcher concluded that the discrepancies which occurred are due to the wide range of items which were being observed simultaneously. It appears that, at times, one observer was focusing on one aspect of the observation while the

other was focusing on a different aspect. There may have also been some lack of clarity around definitions of the checklist items, as these were provided verbally to second-observers rather than in written form. Please note, however, that data collected was not found to be conflicting, just slightly different; for example, in one instance one observer noted "teacher demonstration" while another noted "explanation".

The lack of accuracy in quantifying the use of strategies is a further limitation identified by the researcher, although it is likely to have had only a small impact on the study results. The researcher and inter-observer became aware of the need to quantify the use of strategies during the first observation, however this aspect had not been planned for or included in the observation format, hence research protocol did not allow for inclusion of this data. For example, in one observation a teacher may have implemented the strategy of positive feedback once (for example, he/she may have said "Well done" to a student or the class) when during another observation a teacher may have implemented the strategy of positive feedback consistently throughout the duration of the class. Including more qualitative data related to strategies implemented in classrooms may have been useful in identifying areas of strength and need for PYP teachers educating children with autism and broadened the scope of the results, leading to further discussion.

Finally, the lack of referencing research related to the benefits and challenges associated with educating students with autism within an inquiry-based model of education was identified by the researcher as a study limitation. The meta-analyses of educational approaches for students with autism which were investigated during the literature review did not include this educational model and the current study lacked clear supporting evidence of its benefits due to the study's small scope.

Despite these limitations, the study has provided some valuable insights into teachers' attitudes and practices related to educating young children with autism

within the PYP.

Possible directions for further research

Further research regarding the education of children with ASD within the PYP framework, with a focus on the role of the teacher in providing an inclusive classroom setting, would be beneficial to teachers and school leaders of the IB learning community. This research could extend beyond the boundaries of Latin America, as comparative studies may offer valuable implications for best practice in the international context. Furthermore, extending this research to include other programmes on the IB continuum would provide insight into the education of students with ASD for a much wider range of practitioners working in IB settings. Studies which observe students with autism in both inquiry-based and more traditional models, using standardized measures, would give a direct comparison of the benefits and barriers for students with ASD in this educational model, which would also be beneficial to the IB research community.

Follow-up action research projects, which would be valuable to the learning community, include the following:

-A group of teachers who have students with autism in their class implement specific strategies to support their students with autism, measuring indicators such as student engagement and attainment in class before and after interventions. This type of study would be beneficial as it would provide immediate data to inform practice for the class teacher and his/her colleagues.

-Tracking the implementation of a pilot coaching program for teachers who have a child with autism in their classroom, including an investigation of teacher perceptions and skill levels before, during and after implementation of the coaching program, with a twelve-month follow-up. This would be a worthwhile research project as it would provide useful data and practical implications regarding support systems for teachers.

Implications

This study has provided implications for a range of stakeholders including PYP teachers, school leaders and the International Baccalaureate Organization.

The research literature, along with data collected from teacher interviews and class observations, has established a clear link between the role of the teacher and the educational success of students with autism, outlining a wide range of strategies that support the development of children with autism and fit within the framework of the PYP. Specifically, the use of visual supports, motivational techniques, peer modelling, and sensory supports were highlighted, along with the importance of a truly collaborative approach.

Implications for school leaders are related to increasing support for teachers who have students with ASD in their class through the provision of autism-specific professional development, promotion of a collaborative model for the education for students with autism, and implementation of coaching programs to help teachers as they trial new strategies with their students with autism.

Implications for the IB include the provision of IB-approved professional development related to the specific needs of students with autism, an increase in research in the Online Curriculum Centre (OCC) related specifically to educating students with ASD (including research in languages other than English), and the facilitation of further studies related to ASD across the IB programme continuum and beyond Latin America.

Conclusion

In conclusion, the results of the current study in conjunction with the special

education literature support the notion that the PYP framework is a suitable educational model for the inclusion of students with ASD. The teachers in the current study appeared to have positive views on the PYP, although they faced a number of barriers to educating their students with autism. Because the role of teachers is so crucial in the education of children with autism, it is imperative that school leaders ensure teachers are adequately trained and supported. In this way, students with autism will be afforded the opportunity to reach their potential while enjoying all that the PYP has to offer.

References

Bush, B. (2016) *Educating children with Autism Spectrum Disorder within the Primary Years Program framework.* Unpublished manuscript.

Causton, J. & Theoharis, G. (2014) *The Principal's Handbook for leading inclusive schools.* Baltimore MD: Brookes Publishing Company.

Gulamhussein, A. (2013) Teaching the Teachers: effective professional development in an era of high stakes accountability. Retrieved from http://www.centerforpubliceducation.org/Main-Menu/Staffingstudents/Teaching-the-Teachers-Effective-Professional-Development-in-an-Era-of-High-Stakes-Accountability/Teaching-the-Teachers-Full-Report.pdf

Harper, C., Symon, J. & Frea, W. (2008) Recess is Time-in: Using Peers to Improve Social Skills of Children with Autism. *Journal of Autism and Developmental Disorders, 38* (5), 815-826.

Huang, H.H. & Diamond, K.E. (2009) Early Childhood Teachers' Ideas about Including Children with Disabilities in Programmes Designed for Typically Developing Children. *International Journal of Disability, Development and Education, Vol. 56* (2), 169–182.

Patton, M.Q. (2003) Qualitative evaluation checklist. Retrieved from http://dmeforpeace.org/sites/default/files/Patton_Qualitative%20Evaluation%20Checklist.pdf

Patton, M.Q. (2005, October 15). Qualitative research in *Encyclopedia of statistics in behavioural science.* Retrieved from http://onlinelibrary.wiley.com/doi/ 10.1002/0470013192.bsa514/full.

Posserud, M, Lundervold, A. & Gillberg, C. (2006) Autistic Features in a Total Population of 7-9-Year-Old Children Assessed by the ASSQ (Autism Spectrum Screening Questionnaire). *Journal of Child Psychology and Psychiatry, v47* n2, 167-175.

Ripley, S. (1997). Collaboration between general and special education teachers. Retrieved from https://www.teachervision.com/teaching-methods/resource/2941. html

Sciutto, M., Richwine, S., Mentrikoski, J. & Niedzwiecki, K. (2012) A qualitative analysis of the school experiences of children with Asperger's Syndrome. *Focus on Autism and Other Developmental Disabilities, 27*(3) 177–188.

Skokut, M., Robinson, S., Openden, D. & Jimerson, S. (2008) Promoting the Social and Cognitive Competence of Children with Autism: Interventions at School. *California School Psychologist, v13*, 93-108.

Stainback, S. & Stainback, W. (1996) *Inclusion: A guide for educators.* Baltimore MD: Brookes Publishing Company.

Tomlinson, C.A. (2014) *The differentiated classroom: Responding to the needs of all learners* (2nd ed.) Alexandria, VA: ASCD.

Tomlinson, C.A. & Demirsky Allan, S. (2000). *Leadership for differentiating schools and classrooms.* Alexandria, VA: ASCD.