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The use of visual aids for children with autism in preschool settings: A teacher's perspective

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Abstract

The aim of this dissertation is to investigate the use of visual aids with children with autism within both autism specific preschool classrooms and mainstream preschool classrooms from a teacher's perspective. Both classrooms had children with autism attending when the research was conducted. Qualitative interview schedules were conducted with participants from both settings. The research sample consisted of three autism specific preschool teachers and three mainstream preschool teachers. Results showed that there was a significant difference with the use of visual aids between the two preschool settings. Findings suggest that the autism specific preschool teachers showed a higher degree of knowledge and experience with all visual aids within the preschool setting.

Keywords: Autism, visual aids, picture schedules, PECS, Grace App, preschool, ABA, TEACCH, teacher

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Introduction

The research examined the use of visual aids in both mainstream preschools and autism specific preschools. It has investigated the use of visuals for children with autism and also the teacher's perspective on visual aids and whether they see them as an important aid for children with autism. It looked to compare the use of visual aids between mainstream preschool classrooms and autism specific preschool classrooms.

This piece of research is important because it investigated the use of visual aids to see if they are as important as previous research has found (Flippin et al, 2010, Banda, 2009, Pierce et al, 2013). It also looked to gain a complete understanding of visual aids across two settings and to see if there are any differences. It has investigated the best practice for the use of visual aids in preschools, whether mainstream or autism specific, and has gained insight into how the use of visual aids can be generalised and integrated into a number of settings.

Autism Spectrum Disorder

Autism is a neurodevelopmental disorder that affects the development of the brain during the first 3 years of a child's life. There are three main areas of difficulty that people with autism experience, otherwise known as the triad of impairments. These include impaired communication, impaired social skills and restricted repetitive and stereotype patterns of behaviours, interests and activities as stated in the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM)(DSM-IV, 1994). Autism Spectrum Disorder (ASD) is an umbrella which has encompassed Autism, Rett's syndrome, Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), Asperger syndrome and childhood disintegrative disorder (DSM-IV, 1994).

The first area of the triad to be discussed is restricted, repetitive and stereotyped patterns of behaviours, interests and activities include inflexible adherence to specific routines or rituals, repetitive motor mannerisms (e.g. hand flapping, head shaking) and a preoccupation with parts of objects (car wheels). These activities tend to have a significant affect on the child's social skills.

Kanner (1943) believed that impaired social interactions was the central theme in autism. From the late 1970's onwards there was a significant rise in research in autism and it was categorized by 'impaired language and communication skills – again of a distinctive type; resistance to change or insistence on sameness, as reflected in flexible adherence to routines, motor mannerisms, and stereotypes, and other behavioural oddities; and an onset in the first years of life' (Volkmar & Reichow, 2013, p.2).

Socially children with autism can be seen as being quite 'awkward' due to their significant impairments in non-verbal behaviours such as eye contact and understanding facial expressions. Individuals with autism lack the spontaneous seeking of others to share enjoyment or achievements with, for instance joint attention (Paparella et al, 2011, p.569). Due to these impaired social interactions children with autism tend to play solitary activities and avoid participation in social games, especially with peers (Holmes & Willoughby, 2005, p.161).

An area that can be the cause of concern for parents of children with autism is their impaired communication skills (Vitásková & Říhová 2013, p.87). Impaired

communication skills can range from a slight delay in communication to no development of spoken language. Some children may have adequate language however may not have the social skills to initiate or maintain a conversation with others (Kerbs et al, 2010, p.393). Children can also develop stereotyped and repetitive language such as reciting their favorite songs/cartoons/videos, although they have excellent speech skills, these skills may not be deemed appropriate. The triad of components have been the foundations in diagnosing autism until this year (Woods et al, 2011, p.1).

Up until May 2013, diagnosis of autism occurred through the use of the DSM-IV (1994), however with the publication of DSM-5 (2013) there have been a considerable amount of changes in the diagnosis of autism. Previously within the DSM-IV autism was diagnosed through the triad of impairments. However these have changed slightly. Impaired communication and impaired social interactions have been merged to form one category whilst restricted repetitive and stereotype patterns of behaviours, interests and activities still remains a sole category. This has been widely discussed with many seeing more implications than applications for this new process (Volkmar & Reichow, 2013). This new categorising of autism brings us back to the founder Kanner's original ideas of autism which he first described as autistic disorder, childhood autism, or infantile autism. This is a significantly similar interpretation of autism which the DSM-5 has adopted. Although it appears experts and researchers are reverting back to the original roots of autism, this is not without criticism and anguish from academia.

Volkmar and Reichow (2013) critically analysed the DSM-5 in their paper titled 'Autism in DSM-5: progress and challenges'. This review looks at both the positive affects and the drawbacks of the new edition. The DSM-5 both changed the diagnostic criteria and also the dimensions of the ASD. The change in diagnostic criteria means that it may now be even more difficult for a child with autism to receive a diagnosis early on, therefore impeding on early intervention which is clearly the best treatment for Autism, and can clearly be seen in Dawson et al (2012, p.1150). This will have long-term implication on the child in question and also their surroundings.

This new diagnosis can cause low eligibility for resources early on however how this will affect individuals with autism later in life is unknown. The DSM-5 appears to be attempting to shrink the diagnosis number however these individuals must now fit into a different 'abnormal' category. Prevalence rates of Autism are constantly changing. The Centre for Disease Control and Prevention (CDC) in the United States of America has noted a rise from 1 in every 150 children diagnosed with ASD in 2002 to 1 in every 88 children in 2008.

Teaching children with autism

Autism as like many other areas of ASD, is a complex matter and there is no one single way of teaching a child with autism. Instead we must look at encompassing several teaching strategies to create an umbrella approach. Reed et al (2007, p.417) discussed this when evaluating 'The Real-World Effectiveness of Early Teaching Interventions for Children with Autism Spectrum Disorder'. ASD as discussed previously is a complex disorder which covers a vast amount of sub-categories, and

so it must be noted that no two children are the same although they may behave similarly they cannot be taught identically hence the need for individual education plans (IEPs). In Ireland IEPs have been encouraged by the inclusion of IEPs in The Education for Persons with Special Educational Needs Act 2004 (EPSEN).

EPSEN (Section 3, subsection 5) discusses how a child with special needs must have an educational plan put into place by the school in which they are attending unless an external body has already developed one or the principal of the school the child is attending has requested the Council to prepare one within one month after an independent assessment. However Rose et al (2012, p.110) discussed how unfortunately EPSEN has never fully been implemented in the Republic of Ireland and when they have been used there are high levels of inconsistency. Although there are many methods for teaching children with ASD, Ireland's teaching strategies tend to fall into one of three categories Applied Behaviour Analysis (ABA) in conjunction with the The Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP), Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) and mainstream curriculum which applies to children with no special needs (McConkey & Cassidy, 2010, p.20).

'Applied Behaviour Analysis (ABA) is the science in which tactics derived from the principles of behaviour are applied systematically to improve socially significant behaviour and experimentation is used to identify the variables responsible for behaviour change' (Cooper et al, 2007, p.12). Quite simply ABA is the science of behaviour change. It is the use of behaviour analytic learning methods to teach (increase or decrease) socially important behaviour. Conroy (2004, p.45) discusses

implementing proactive interventions to help modify children's behaviours and in turn teach children acceptable behaviours. ABA is used in conjunction with the VB-MAPP, which is an assessment tool and curriculum guide for individuals who demonstrate a language delay. Bondy et al (2010, p.200) noted that when the VB-MAPP 'is added to the basic behavioral procedures common to applied behavior analysis, greater clinical gains for children with autism and other developmental disabilities are possible'.

A teaching method that is being integrated into Irish curriculums more so than ABA is TEACCH. TEACCH is a programme which values the importance of structure and promotes the use of visual aids (Boyd et al, 2014). Panerai et al (2009, p.847) discussed how their studies findings show that TEACCH had a positive outcome for children with autism as a teaching strategy in the home environment, mainstream school environment and residential environments. Mesibov and Shea (2010, p.570) discuss how TEACHH is now an evidence-based approach for teaching interventions for individuals with autism. This idea is also backed up by Reichow et al (2008) who noted that evidence-based practices are the most important for early intervention and that practitioners must specify these evidence-based practices specifically with children with autism.

ABA has been prominently recognized and used worldwide for a large amount of time however Ireland is still delving into the idea of it and so it is still a relatively new theory to educators in Ireland. In Ireland the mainstream preschool education system has had significant development over the years with the introduction of the ECCE (Early Childhood Care and Education) scheme which now sees all children avail of

one years free preschool education. However the structure of the preschool curriculum appears to be unstructured with a very limited amount of research and publications into this area. Although there is some structure, preschools in Ireland tend to have free range as to what their lesson plans will include. In terms of the integration of disabled student into mainstream preschools again there is very limited research to Ireland however Gray & Winter (2011) discuss the integration of disabled students in mainstream preschools in Northern Ireland. Gray & Winter (2011) found that when children with a disability where integrated they tended to engage and actively participate with peers, they also found that children with a disability tended to model their peers who had no apparent disability.

Visual aids

Visual aids have many functions when it comes to autism. The primary use of visual aids is for communication and understanding of tasks. An early sign of autism is not only a speech delay but also impaired social interaction (Paperalla et al, 2011). The DSM-IV has combined these categories and it can be understood why in this section. The most prominent visual aid used to increase communication is the augmentative communication system known as Picture Exchange Communication System (PECS). PECS was developed by Burrhus Frederic Skinner and was based on the analysis of verbal behaviour. As discussed by Paden et al (2012, p.258) PECS can teach children how to request items from peers. This means that not only are PECS encouraging communication but also facilitating peer interactions. Yoder and Leiberan (2010, p.631) found that their randomized trial control analysis favoured the Picture Exchange Communication System as a form of non-verbal communication (see figure 1.1).

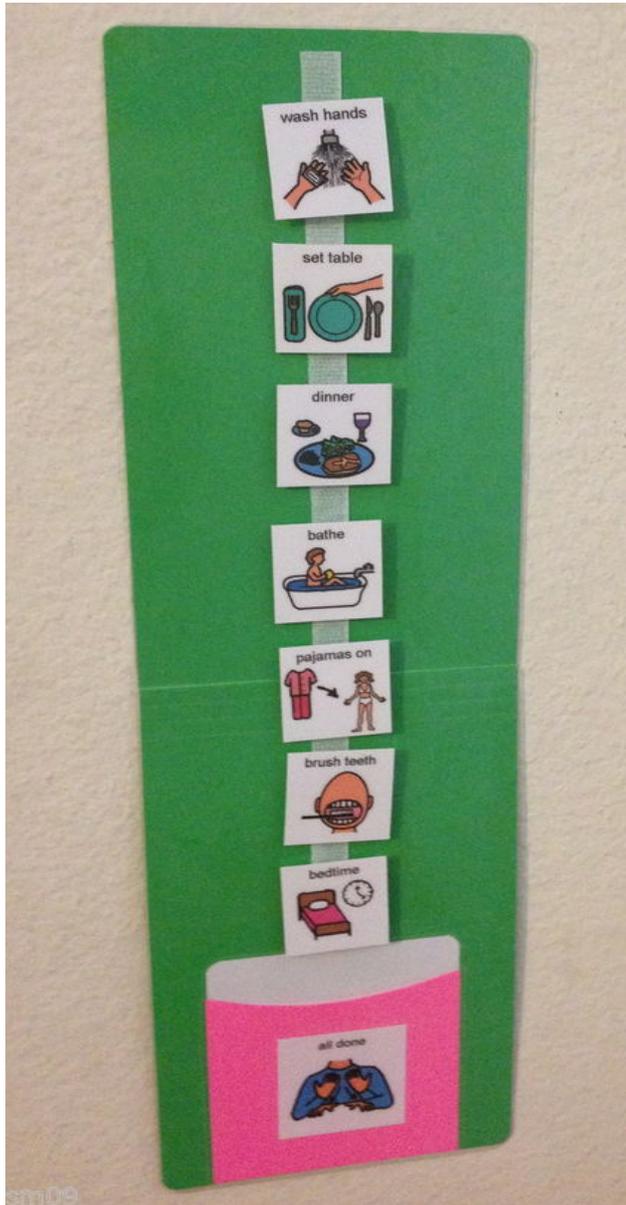


Figure 1.1

in communication and concerns about maintenance and generalization were identified. However more recently in 2012, Greenberg et al (p.539) assessed the generalization of PECS and found that participants could generalize PECS across many different settings, people and also maintained the skill level after a period of time. A communication system which has evolved from PECS is the Grace App. The Grace App takes the basic ideas of PECS and utilizes them on an iTouch, iPad or iPhone. Unfortunately due to its recent introduction of this technology there is no short to medium term peer reviewed research available regarding the Grace App at this current time.

Although most research tends to focus on the positive side of PECS, there are a small collection of academia which criticise the limitations of PECS. Flippin et al (2010, p.178), concluded that there were only small to moderate gains

A visual schedule helps provides predictability for a person with Autism and also helps them transition effectively throughout the day (see figure 1.2). Visual schedules are used in many ways both in the classroom and within the home. Pierce et al (2013, p.253) discusses how visual schedules promote independence in the classroom for a



child with Autism. This is a crucial skill for a child to learn, especially if they are to be integrated into a mainstream classroom. Banda et al (2009, p.17) illustrate how visual aids ‘are a promising educational strategy to support transitions for students with autism’. Schneider & Goldstein (2010, p.149) discuss how visual schedules improve the likelihood that a child with Autism will stay on track with a specific task. Schneider & Goldstein (2010, p.149) also discuss the use of social stories to help a child understand appropriate behaviours

Figure 1.2

albeit the best and social

improvement was when both visual schedules stories were used conjunctively.

Social stories are stories developed to help a child with autism understand a series of events which will happen and can involve some form of social interaction (Samuels & Stansfield, 2012). Previous research has shown mixed findings surrounding social stories. Kokina & Kern (2010) examined the use of social stories on intervention outcomes and had mixed results. Although results showed social stories did in fact improve dealing with inappropriate behaviours, results also concluded that they were not as effective when teaching social skills. These results are similar to Leaf et al (2012, p.281) who found that social stories only had a 22% success rate on learning social skills unlike the teaching interaction procedure which had a 100% success rate. Other visual aids which can be used on a daily basis with children with an ASD include choice boards, token boards and first-then transition cards. However, not as much research has been done into these areas as they are only a small feature in a child with autism's school life. The main visual aids used daily are; communication systems such as PECS and Grace App and visual schedules.

Conclusion

There is a vast amount of research into the area of autism and the uses of visual aids. The main areas that have been discussed include PECS and Grace App. As discussed these are augmentative communication systems which help non-verbal children communicate. Research into PECS concludes that it is a positive communication system and can thoroughly help children with autism function in everyday life.

Like PECS; visual schedules have been noted by many studies to have a positive and lasting affect on children with autism unlike social stories which are still debatable as to just how they can help a child with autism function in their daily lives. As can be

seen there is an extensive amount of research into the areas of Autism and education and the use of visual aids.

Many of the studies such as Pierce et al (2013), Banda (2009) and Schneider & Goldstein (2010) discuss just how positive visual aids are for a child with autism in the classroom and so it is essential to understand the full use of visual aids in Irish preschools and also the affect they have on the child with autism. TEACCH and ABA have been partially integrated into mainstream and so why not include visual aids as a necessity in a child with autisms daily school life. It is intended that the proposed research will satisfy this gap in the literature.

The literature reviewed shows an opening in the literature in the area of comparing the use of visual aids across different settings. Studies including Pierce (2013, p.253), Banda (2009, p.16) & Schneider & Goldstein (2010, p.149) looked at the use of visual aids for individuals with autism however no one looked at the importance of the setting. Greenberg et al (2012, p.539) did look at the importance of the generalisation of PECS across different settings however no researcher has looked at visual aids as a whole, encompassing augmentative communication aids and other visual aids such as schedules and social stories.

The proposed research will look to satisfy these apparent gaps and hopes to provide sound findings and concrete evidence surrounding the use of visual aids. This research looks to find the best use of visual aids and to then generalise this use of visual aids across many settings. Visual aids have been seen has not only a positive instrument for children with autism but also an educational aid and so it is essential

that this area is explored extensively in order to utilize visual aids to their highest potentials.

Methodology

‘Qualitative research was typically designed to reveal a range of experiences and identify commonalities and differences between groups or individual’ (Townsend et al, 2010, p.618). A qualitative approach was appropriate because the aim of the research was to understand the use of visual schedules in a classroom from a teacher’s perspective, across two different settings. ‘Qualitative research, as contrast with quantitative studies, places more emphasis on the study of the phenomena from the perspective of the insider’. (Lapna, Quartaroli and Riemer 2012: p. 3). Interviews were ideal for this research as they allowed vast amounts of information to be obtained within the interviews. This information then helped support the investigations of the researcher.

Materials

This body of research was conducted using interview schedules. Prior to the interviews a number of questions were developed as a foundation for the researcher to work from (appendix 1). The interviews were recorded using a mobile device and both the paper and pen method and NVIVO software was used to analyze the findings.

Participants

The sample population was comprised of five females and one male. The age group of the participants ranged from 22 years of age to 33 years of age. The qualifications of the sample population ranged from level 6 childcare qualification to level 8 Bachelor degrees. The amount of experience working with children with autism ranged from

one month to four years. More information on participants can be found within appendix 2.

The participants for this piece of research were currently employed staff members in an autism specific preschool and currently employed staff members in a mainstream preschool which have autistic children attending. All participants were working with at least one child with an autism spectrum disorder (ASD) therefore allowing their knowledge to be represented within the study.

Three tutors from an autism specific preschool and three assistants from a mainstream preschool with autistic children attending were interviewed. Although the staff members held different titles in the two different schools, their roles were primarily the same. All participants worked with children with autism on a daily basis in a preschool setting.

Procedure

There were a number of steps involved in order to gain access to the sample. Firstly a number of preschools, both autism specific and mainstream schools were contacted and informed of the research. Two preschools agreed to participate and access letters were distributed to these preschools to allow the researcher to inform staff members of the research being conducted(appendix 3).

Staff members were then verbally informed of the study and were also invited to participate. Interviews were arranged for willing participants at a time and location that suited them. At the time of the interviews participants were ask to sign a written

consent form (appendix 4) to acknowledge their involvement in the research. It also outlined ethical issues such as the option to withdraw from the research. All participants volunteered to participate and no reimbursements were made. The interviews with participants ranged in length of time from 8 minutes to 24 minutes. Interviews were recorded on a mobile device. All interviews were then transcribed by the researcher and stored on a password protected USB stick. The interviews were analysed firstly with paper and pen and later using the NVIVO software. The use of paper and pen simply means thoroughly reading through the transcribed interviews and highlighting similar topics. NVIVO then grouped all these topics together to form themes.

Throughout the interviews some obstacles occurred such as people discussing their experiences with children with autism outside of the research area of preschool settings. The researcher overcame this issue by redirecting the participants back to previous incidents they had discussed within the interview. The only change within the original plan of the research was that instead of eight interviews the researcher only conducted six. This was primarily because the researcher felt they had enough information and material to cover the full scope of the topic area.

Data Analysis

Qualitative research can be analysed and interpreted in a number of different ways. Thematic analysis organizes ‘data according to key themes, concepts and emergent categories’ (Ritchie & Lewis 2003: p. 262). All six interviews were analysed repeatedly by the researcher to ensure they had a complete comprehension of the data. This was done through the paper and pen method. Four themes were then created

within the data which related to the research question. These four themes were then analysed further and broken into sub-themes. These sub-themes are discussed further in the results and discussion section.

Ethics

Within qualitative analysis ethics are extremely important. Ethics not only regulate qualitative analysis but also provide boundaries which research must respect and adhere by. Within this piece of research there were a substantial amount of ethical issues which were addressed by the researcher.

In order to gain access to the participants both the autism specific preschool and mainstream preschool signed access letters allowing the researcher to discuss the study with their employees were contracted. Once these were signed by the organizations the researcher verbally discussed the topic of the research and the aim of the study with the employees.

Employees were then approach individually to see if they would like to participate in the study. This was to ensure that it remained completely confidential as to who the participants were. Participants who were willing to contribute to the study were then provided with more information regarding the study and al given a consent form.

The consent form was used to ensure the participants understood what they were agreeing to participate in therefore ensuring informed consent was sustained. The consent form also provided the participants with written information on confidentiality within the study and the option to withdraw from the study until the

point of submission. These two ethical issues were particularly important within this study because of the sensitive nature of the topic. The researcher wanted to ensure that the participants knew that no third party would be able to identify them within the study and also that if they did not feel comfortable discussing sensitive topics that they could withdraw at any time or withhold from answering any questions.

At the end of the interviews the participants were debriefed on the aims of the research to ensure they had full understanding of what they were participating in. Once the interviews were conducted the researcher transcribed the interviews verbatim to ensure that no third party had access to the raw data. This was to again ensure confidentiality within the study and also to guarantee the written data was an exact copy of the recorded interviews.

The participant's names were changed within the transcribed interviews to ensure confidentiality. The transcribed interviews were then stored on a password protected USB to guarantee no third party had access to the data. The password protected USB was also held in a secure location with no other materials from the research.

Results

In this sections the results of the findings will be discussed. Results from the autism specific preschool and mainstream preschool interview schedules will be compared against each other throughout. The following themes were identified in this research; types of visual aids, use of visual aids, teacher's opinions and knowledge of visual aids and teacher's ideal school environment for teaching children with autism.

Types of Visuals Aids

As discussed in the literature review there are vast amount of forms of visual aids used to facilitate a child with autism in many aspects of their lives including communication, transitioning and participating in everyday independent life skills. Participant B from the autism specific preschool listed many different visual aids which were used daily within her classroom,

‘we have visuals, em we have schedules, em and we have first-then’s...’

(Participant B, autism specific preschool)

Participant B from the autism specific preschool also discussed the visual aids used to help the children in her school communicate,

‘we have PECS (Picture Exchange Communication System), so em it’s the picture exchange communication system and em it’s a book which the child communicates through, with an I want picture and a reinforcing picture and they put it on a strip and do an exchange and then we have the eh grace app. Eh the app on the iTouch which is similar to the PECS method and then we have the eh verbal children.’

(Participant B, autism specific preschool)

Participant C from the autism specific preschool also listed PECS, schedules and first-then cards,

‘2 children non-verbal so they use PECS’

(Participant C, autism specific preschool)

‘so at work time you would have a first-then card all the time’

(Participant C, autism specific preschool)

Participant A from mainstream preschool discussed how they had used visual schedule at one point in within the preschool however they were not in place at the current time,

‘...visual scheduling. So we did use that with reinforcers’

(Participant 1, mainstream preschool)

Participant C from mainstream preschool also discussed how they had used visual schedule at one point in within the preschool. The use of this schedule was implemented for one child who had autism,

‘It was basically he had a picture of what he had to do like wash his hands or whatever and once he had done that he would put it in an envelope’

(Participant 3, mainstream preschool)

When discussing visual aids all participants from the autism specific preschool were highly knowledgeable and had a vast amount of experience of the use of visual aids within the classroom. Unlike the participants from the mainstream preschool who had little or no experience with visual aids in the classroom. Participant B from mainstream preschool was asked about their awareness of other types of communication for non-verbal children,

‘I know of lamh and the Irish sign language but I wouldn’t know any of them’.

(Participant 2, mainstream preschool)

Use of Visual Aids Within the Classroom

Communication

Impaired communication is one of the three diagnostic areas of autism (Vitásková & Říhová 2013, p.87) and so it is clearly imperative that communication systems must be put in place for children who are non-verbal. As discussed in the literature review there are many forms of communication systems with PECS and the Grace App seen as the two most important within the autism specific preschool. Participant C from the autism specific preschool notes the importance of PECS for non-verbal children,

‘They don’t have that voice to speak up and want, ask for help, or whatever’.

(Participant C, autism specific preschool)

Participant A from the autism specific preschool also notes how a communication system can help deal with other issues such as maladaptive behaviours,

‘They can say what they want and when they want. They have the control over it but if they didn’t have the communication system and they’re looking for something and you don’t know what they’re looking for obviously they’re going to act out’.

(Participant A, autism specific preschool)

There were clear different views on communication systems between the autism specific preschool and the mainstream preschool. Participant A from the mainstream preschool discussed in their interview how they didn’t implement PECS however they did adapt it slightly and introduce in the preschool,

‘We tried when his speech was very very poor, we did try little bits like the toilet and bits like that. But it certainly wasn’t, it was an adaption of PECS because he wasn’t using the book’.

(Participant 1, mainstream preschool)

Participant A from the mainstream preschool also noted how the limited amount of staff members within the classroom at any given time means that no child can have one on one attention. This would affect the primary teaching of PECS to a child with autism.

‘We’re 1 to 8 we have 24 children we have 3 staff on the floor, em. It’s very hard to let a person come off the floor to work with their key child with autism so you’re generally working on the floor with your 7 other children and trying to implement this and it’s very hard. It’s now on impossible to be honest’. (Participant 1, mainstream preschool)

Challenging Behaviours

Maladaptive behaviours can include hitting, kicking, self injuring behaviours; essentially any behaviour which is seen to be socially unacceptable (Hall & Graff, 2010, p.195). All participants within this study noted the apparent maladaptive behaviours the children with autism which they work with partake in, such as

‘A lot of possessive behaviours. Like the child has his toys and if anybody touches them even if he’s not playing with them he goes crazy’.

(Participant 3, mainstream preschool)

Participant A from the mainstream preschool also discusses the same child’s ‘disruptive’ behaviours,

‘He can turn tables upside down, he can throw chairs across the room’.

(Participant 1, mainstream preschool)

Participant C from the autism specific preschool notes how children within her preschool setting can sometimes have self-injuring behaviours,

‘You wouldn’t see a typically developing child hurt themselves directly like pinching themselves like some of the kids in the school might do that’. (Participant C, autism specific preschool)

It is clearly apparent that all participants have seen these maladaptive behaviours within their preschool settings and on a continuous basis but it is important to note the difference in how each setting deals with these behaviours. Participant B from autism specific school discussing how they have been trained to deal with such behaviours, ‘If you would have a demand on a child and they like swipe you would block them and try and redirect them to something else. Keep your demand in place, the use of visuals always help to em reduce’.

(Participant B, autism specific school)

Participant A from the autism specific preschool also discusses the importance of visuals when dealing with disruptive behaviours which prevents a child from learning, ‘You can see that they’re distracted and looking around and then you show that (it’s time for card) to them, and even if it takes a while to come to terms to it, it does definitely bring them back’.

(Participant A, autism specific preschool)

The findings from the autism specific school appear to be quite similar, that all staff use visuals at different times throughout the school day. Unlike the mainstream preschool where it appears to be less structured and rigid in how all staff members deal with behaviours,

‘We will sit there and literally hold him...when you have him in your arms at first, he calms down quite quickly. Yes if you keep hold of him and just rub his head’.

(Participant 2, mainstream preschool)

Participant C from the mainstream preschool also discusses how this child tends to be

‘Left alone on his own, in his own world’.

(Participant 3, mainstream preschool)

Transitioning

Transitioning appeared to be an issue with the children that all the participants work closely with. Many of the participants noted that maladaptive behaviours tended to occur when transitioning a child from one activity to another. However participant B from the autism specific preschool discusses how using a visual schedule can help a child transition smoothly,

‘A child with autism, we’re going to like change the schedules from play to DVD so they can see the visual and understand’.

(Participant B, autism specific preschool)

Participant C from the autism specific preschool also notes how they believed that the children tended to transition better if they had their visual schedules and a set routine, ‘The tend to like a bit more routine and they like to know what’s going to happen next with individual schedules’.

(Participant B, autism specific preschool)

When discussing the topic of transitioning, particularly to non-motivating activating activities Participant B from the mainstream preschool noted how the autistic child in their class tends to avoid it,

‘(He) has this habit of no no no. Right, and he likes saying no a lot’.

(Participant 2, mainstream preschool)

Communication, behaviours and transitioning appeared to be the three apparent areas which required the use of visual aids for children with autism within the preschool classroom.

Teacher's Opinions and Knowledge of Visual Aids

There was a distinct difference in the teacher's knowledge and experience with the use of visual aids between the two preschools. Within the autism specific preschool visual aids appeared to be a vital and essential tool in teaching and dealing with children with autism on a daily basis. When asked did the participant's believe visual aids helped the children with autism the autism specific teachers all strongly agreed,

'Yeh definitely, yeh'.

(Participant C, autism specific preschool)

'The visuals are quite important'.

(Participant B, autism specific preschool)

'Yeah I think, yeah, it's affective in here'.

(Participant A, autism specific preschool)

The findings showed that the mainstream preschool teachers clearly had a lack of understanding regarding using visual aids within the classroom. All participants from the mainstream preschool noted that visuals were only concretely implemented and followed through when they had a student teacher volunteering within the classroom, 'She did a schedule with him (child with autism) and the day just went so much more smoothly'.

(Participant 3, mainstream preschool)

Clearly as the participant notes, visual aids helped this child yet were not implemented and since the volunteer has left they have not been continued. Even though the teachers showed a lack of understanding regarding the use of visual aids within their classroom they all seen them as being positive and illustrated the

importance of them when discussing the ideal environment to teach a child with autism in.

Teacher's Ideal School Environment for Teaching Children with Autism

All participants were asked to discuss their ideal environment for teaching children with autism. This environment was not restricted by funding and could meet any needs of the children with autism. Out of the six participants, five noted how schedules would be an essential part of the environment. Participant's A and C from the autism specific preschool both said 'schedules' as the most important need of the child with autism whilst participant B from the mainstream school also noted the importance of a communication system.

'If you think about it even to the point he loves playing with kids, if he could communicate with them more'.

(Participant 2, mainstream school)

Participant C from the mainstream preschool also illustrates the importance of schedules and how they should be used within the classroom,

'I think the picture scheduling, going back to the picture scheduling'.

(Participant 3, mainstream preschool)

Participant B from the autism specific school illustrated why they believed visuals were the most importance aspect when designing the ideal environment for teaching children with autism,

'I would say probably put in visuals, and having schedules would be the most important'.

(Participant B, autism specific school)

Discussion

This section will be used to examine and critically analyse the findings of this study. It will then draw conclusions based on the data obtained through the qualitative interviews conducted by the researcher and previous academic literature. The findings from this research showed the mainstream preschool have very little knowledge if any of both autism and the use of visual aids with children with autism even though they have children on the spectrum attending on a daily basis. The research also found that both mainstream preschool teachers and autism specific teachers realize and stress the importance of visuals aids.

All participants were aware of different types of visual aids for children with autism. However the teachers from the autism specific preschool had a considerably larger range of knowledge surrounding the different visual aids which evidently benefit children with autism. Participant B from the autism specific preschool discusses PECS and their function in school to help children communicate. There is a significant amount of literature which supports the use of PECS, the research highlights just how valuable a communication system can be for a non-verbal child. 'PECS is recognized as an effective intervention for increasing communication in children with autism' (Preston & Carter, 2009; Sulzer-Azaroff et al., 2009 as cited in Gordon et al, 2011, p.452). Participant C from the autism specific preschool illustrated just how important PECS were for the children in her classroom, 'They don't have that voice to speak up and want, ask for help, or whatever'.

PECS have a significant amount of benefits which have been researched extensively and it is understandable that PECS have become an essential tool for children with autism in their daily lives. The autism specific preschool teachers discussed how PECS were implemented in all classrooms and were practiced on a daily basis. Not only do PECS allow a child to communicate their wants but PECS also have social-communication effects (Lerna et al, 2012, Lerna et al, 2014, Anderson et al, 2007). A non-verbal child will have significant issues surrounding socializing with others and may do so inappropriately, for instance a person with autism may have issues both with eye contact and understanding facial expressions (Vitásková & Říhová, 2013 p.87).

PECS are also understood to have some affect on speech and language issues which are apparent with a high number of children with autism (Greenberg et al, 2014, p.35). PECS training is broken down in different phases, phase 4 is the time when most vocalizations are apparent (Jurgens et al, p.75). Phase 4 allows for a delay from the trainer to allow the child to attempt a word or an approximation of a word. Flippin et al (2010, p.189) research also supported the idea that phase 4 of PECS was the crucial step in aiding speech development. PECS also have a substantial affect on a non-verbal child's challenging behaviours (Hutchins and Prelock, 2014, Ganz et al, 2009).

Maladaptive behaviours can include hitting, kicking, self injuring behaviours; essentially any behaviour which is seen to be socially unacceptable (Hall & Graff, 2010, p.195). There are clear reasoning's apparent from previous research to imply that not only do PECS provide communication through a visual aid but they also deal

with many other issues associated with autism such as challenging behaviours and impaired social-communication. However in contrast to the significant amount of research which supports the use of PECS as a visual aid participant A from the mainstream preschool noted that although they had a non-verbal child and the teacher was trained in PECS so they did not implement it as previous children 'hadn't taken to it'.

Another visual aid which was discussed by all participants in this research was picture scheduling. This emerged as the most recognized and widely used visual aid across all participants. Both the mainstream preschool teachers and the autism specific preschool teachers discussed how these were used daily within the preschool settings. Although picture scheduling was used in different ways between the preschools, it was for the same fundamental reason, to help children with autism understand routines and to transition throughout the school day. Correspondingly research has shown that picture schedules can have a positive affect in helping children with autism transitions independently throughout the day (Pierce et al, 2009, p.253, Matsushita & Sonoyama, 2013, p.279, Banda et al, 2009, p.18).

Issues surrounding transitions within the classroom can have significant effects on a child with autism. Not only can they cause disruptions within the classroom but transitioning issues can also cause socialization problems and affect the child with autisms independence (Banda et al, 2009, p.16). Participant B from the autism specific preschool noted that challenging behaviours were more likely going to occur in conjunction with transitions. The participant also noted that schedules were how the autism specific preschool dealt with this issue. Schedules can be used for a variety

of reasons within the classroom according to research which supports their use within the preschool setting. This is supported by Waters et al (2009, p.309, Jenna et al, 2014, p.480) whose research shows visual schedules have been understood to help alleviate challenging behaviours.

Previous research notes that not only do picture schedules help children with autism transition but they are also found to help develop their impaired play skills (Murdock & Hobbs, 2011, p.875, Schneider & Goldstein, 2010, p.149). The curriculum used within Ireland to teach children with ASD with the use of visuals is primarily TEACCH (treatment and Education of Autistic and related Communication handicapped Children) and ABA (Applied Behavioural Analysis). TEACCH supports picture scheduling and visual supports for children with ASD (Callahan et al, 2010, p.79).

Although no participants identified TEACCH or ABA within the interviews many did touch on the use of both methods, namely through the use of visual and when dealing with challenging or maladaptive behaviours. There was a clear contrast between the two different schools as to how they dealt with these maladaptive behaviours. The autism specific preschool appears to follow strict ABA guidelines in how they approach behaviours. This is evidently supported through ABA literature which discusses the importance of interventions to deal with these inappropriate and often challenging behaviours (Doehring et al, 2014, p.25, Grindle et al, 2012, p.298). The autism specific preschool teachers discussed how important it was to be consistent with the children in how they dealt with challenging behaviours, they also discussed

how they would redirect a child or use a first then card to help the child understand what was expected of them at any given time.

There was a clear contrast in this area between the two schools as the mainstream preschool discussed how they would 'keep hold of him (child with autism) and rub his head' (participant 2 mainstream preschool). Falcomata et al (2013, p.723) discuss how functional communication training and reinforcement schedules help reduce maladaptive behaviours within the ASD population. The technique discussed in this research does not favour any forms of restraints which are evidently apparent in the mainstream preschool. Weber et al (2009) discusses the use of restrictive interventions or otherwise restraining methods with people with disabilities exhibiting challenging behaviours. A large percentage of the sample (34%) had an ASD, other disabilities included, but were not limited to speech impairments and physical disabilities.

The study found that there were unprecedented implications with the use of restrictive methods. These included the psychological affect (Weber, 2009, p.505) on staff members who administered restrictive interventions and also there is a limited amount of knowledge on the long term affects of restrictive interventions on individuals (Weber, 2009, p.495). Although the mainstream preschool noted how they dealt with challenging behaviours was to hold a child it must be noted it appeared to be for the safety of not only the child presenting the challenging behaviours but also for other children within the classroom. Devlin et al (2011) study discussed the use of two different techniques to deal with challenging behaviours, sensory integration therapy and behavioural intervention.

Behavioural intervention used a daily visual schedule to attempt to reduce maladaptive behaviours (Devlin et al, 2011, p.1310) whilst the sensory integration therapy aimed to reduce sensory issues which are believed to have an affect on challenging behaviours. The behavioural intervention method proved to be the most successful (Devlin et al, 2011, p.1317) with a significant reduction in self-injury behaviours among participants. This piece of research shows the importance of visual aids to assist with challenging behaviours which children with autism exhibit. This supports the approach lead by the teachers from the autism specific preschool.

The results from this research also show a considerable difference between the two preschools, which could have an adverse affect on the use of visual aids within the classroom such as the teacher to child ratio. In the autism specific preschool the ratio of teachers to children was 4:6. This is significantly different to the ratio from the mainstream preschool which was one teacher to 8 children at any given time. Visual aids such as PECS take a considerable amount of time to teach to a child and as participant 1 from the mainstream preschool noted 'it is impossible' to work one on one with a child in a mainstream preschool. Whereas the autism specific preschool allows for children to access one on one teaching for up to half of their school day.

There is a significant void in research which includes finding the best teaching methods and strategies to provide best practice of teaching for children with autism. It is understandable that a higher teacher to child ratio would not only allow for more visual aids to be incorporated into the school day but also for more time to be spent working with each individual child to meet to potential. Another area which must be

investigated is the level of experience and qualifications the teachers themselves have. There are some concerning issues surrounding the significant difference in experience, training and qualification levels. The autism specific preschool teachers all have a minimum of a level 8 bachelors degree covering areas of psychology, primary school teaching and social care.

All participants from the autism specific school also embarked on an intense internal training programme which saw them gain an understanding of individual education plans, visual aids and how to deal with challenging behaviours within the classroom. This is a significant difference from the mainstream preschool whose qualifications included a Fetac level 6 in Childcare, a level 8 bachelor degree in Community Development and a level 8 bachelor degree in Education and Training. All participants from the mainstream preschool had no education surrounding autism and only one staff member had PECS training, however they had never implemented a PECS programme.

However none of the participants from the mainstream preschool were ever advised on how to deal with challenging behaviours which are increasingly more likely to occur with a child with autism. Clearly these issues including a lack of experience or knowledge are going to significantly affect the use of visual aids within a classroom because if teachers are not aware of the benefits of such visual aids they may be resistant to implement them. Syriopoulou-Delli et al (2012, p.765) found that experience and education of working with children with autism was paramount and found that teachers with more education and experience surrounding autism were more capable of managing a class with children with autism attending. A lack of

knowledge and experience is clearly going to have a knock on affect in the effective use of visual aids within the classroom

Limitations

It is important to note that whilst this is a knowledgeable piece of research, there has also been considerable limitations. The sample size for instance is quite small, and a larger sample size would provide a wider scope as it would cover a larger range of organizations. Due to time constraints it was not possible to investigate this research with a wider population.

In order to follow ethical guidelines there are clear limitations on how in depth the researcher could go when discussing issues such as behaviours with young children with autism. As a researcher you must be aware of how you approach sensitive topics and how in depth you feel the participant is willing to proceed.

Future Research

With a cause for ASD still unclear it is important that research now looks at treatment and intervention for ASD to ensure individuals live an integrated and worthwhile life. Early intervention and education are basic areas which must be structured and standardised for all individuals diagnosed with ASD. Future recommendations would be for a study of a significantly larger scale from a larger geographical area. This would ensure that the finding could be generalized to the wider public and that findings may possibly be more diverse. It would be recommended that some future research would explore more positive areas within autism such as the strengths of children with autism.

Possible areas of research may include investigating into the actual amount progress made with children when using visual aids against a control group with no visual aids. There are still significant voids in the research area of using visual aids with children with autism, it is crucial that this is investigated further. With a cause for ASD still unclear it is important that research now looks at treatment and intervention for ASD to ensure individuals live an integrated and worthwhile life. Early intervention and education are basic areas which must be structured and standardised for all individuals diagnosed with ASD.

Another area which future analysis should be conducted in is the communication aid The Grace App. With no previous research into The Grace App, it is still unclear as to how the emergence of technology within the area of visual aids will benefit a child with autism.

Conclusion

This piece of research aimed to investigate teacher's perspectives of the use of visual aids for children with autism in across two different preschool settings. It also looked to see if visual aids were used effectively within the two preschool settings. This research has provided valuable knowledge into the use of visual aids in both a mainstream preschool and an autism specific preschool. The research can conclude that visual aids such as PECS and picture schedules have a significantly positive affect on children with autism and can help them in many areas which they may struggle.

PECS can unmistakably help children not only communicate, but also provide them with necessary skills to initiate and sustain social interactions with their peers.

Previous research discussed in this piece has found that picture schedules not only help a child understand their daily routine but can also reduce or possibly alleviate challenging behaviours. By comparing visual aids across two significantly different settings it helped to understand not only their use but also their importance in the daily lives of children with autism. This piece of research provided evidence, which has been backed up by previous research, that not only should visual aids be incorporated into all preschool settings which have children with autism attending but also used continuously throughout the school day. This research has shown that visual aids help a child understand and communicate more efficiently within the classroom.

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Appendix i

Interview Questions:

1. Do you have any training specifically with Autism?
2. In terms of teaching children with Autism do you have a specific teaching curriculum for children with Autism?
3. What behaviours do you see in children with Autism that you don't see in typically developing children?
4. How do you deal with these different behaviours?
5. Have you ever been trained to deal with such behaviours?
6. Do you record such behaviours? If so, how?
7. If you have had a tough behaviour to deal with is there anyone you can talk to? What is your support system like?
8. Is dealing with behaviours a challenge when working with children with Autism?
9. What other challenges do you face?
10. How do you deal with a child with autism if they are non-verbal?
11. Do you have any other methods of communication to supplement the child?
12. Do you use any other visuals aids within the classroom?
13. Regarding the behaviours as we discussed earlier, how would a child with Autism know what is expected of them? Words? Or your visuals?
14. Do you feel these behaviours deteriorate or grow over time?
15. Overall do you think from previous experiences that children with Autism fit into your classroom?
16. What would be your ideal way to teach a child with Autism?

Appendix ii

Demographics form:

1. Sex:

2. Age:

3. Qualifications:

4. Work experience with children:

5. Work experience with Autism:

6. Work title:

Appendix iii

Access letter:

Dr. Annette Jorgensen,
Research Coordinator,
Social Science
Programme,
Dublin Business School.

15th October 2013

Dear Sir/ Madam,

Re: Permission to conduct a research study with members of your organisation.

Grace Jones is enrolled as a final year social science student at Dublin Business School. DBS social science students are required to complete an independent research project during their final year of study. Grace's final year research project aims to explore the experiences of teachers working with children on the autism spectrum.

All research conducted by final year students is done for the purpose of meeting course requirements. All results obtained are strictly confidential, and to be used for assessment of the researching student's qualifications for receipt of a BA in Social Science. Grace is requesting written permission, as soon as possible, to collect research data.

Please note that all DBS Students are covered under our Public Liability Insurance policy when they are carrying out activities off Campus in relation to the completion of their course.

Please feel free to address any questions regarding this research to Dr. Annette Jorgensen, Research Coordinator, Social Science Programme, Dublin Business School. Grace (Email: gracejones89@hotmail.com) can also provide further details about how she will conduct his research study.

Thank you for your time.

Yours Sincerely,

Dr. Annette Jorgensen
Email: annette.jorgensen@dbs.ie

Appendix iv

Consent form:



A teacher's perspective on the use of visual aids for children with autism in preschool settings

My name is Grace Rebecca Jones and I am conducting research that explores the use of visual aids within preschool settings.

You are invited to take part in this study and participation involves an interview that will take roughly 40 minutes.

Participation is completely voluntary and so you are not obliged to take part. If you do take part and any of the questions do raise difficult feelings, you do not have to answer that question, and/or continue with the interview.

Participation is confidential. If, after the interview has been completed, you wish to have your interview removed from the study this can be accommodated up until the research study is published.

The interview, and all associated documentation, will be securely stored and stored on a password protected USB stick.

It is important that you understand that by completing and submitting the interview that you are consenting to participate in the study.

Should you require any further information about the research, please contact Grace Rebecca Jones at gracejones89@hotmail.com or Annette Jorgensen at Annette.jorgensen@dbs.ie.

Thank you for participating in this study.

Participant Signature: _____ Date: