Exploring Teacher Practices: Supporting Students with Autism Spectrum Disorders
in the Special Education Classroom

By
Natasha Shalini Singh

A research paper submitted in conformity with the requirements
For the degree of Master of Teaching
Department of Curriculum, Teaching and Learning
Ontario Institute for Studies in Education of the University of Toronto

Copyright by Natasha Shalini Singh, April 2015

Attribution-NonCommercial-NoDerivs
CC BY-NC-ND
This work is licenced under a Creative Commons Attribution-NonCommerical-NoDerivs CC BY-NC—ND 4.0 International Licence
Abstract

This research study examines the teaching pedagogy of two teachers who each educate a group of students with Autism Spectrum Disorder (ASD) in a special education class. This qualitative study looks at strategies that teachers have found to be effective for their students living with ASD. Data was collected through one interview conducted with each of the participants. The findings are presented in themes, and a discussion situates them within the literature. The themes that emerged through data analysis are: use of technology, use of visuals and the use of reinforcement. The teachers provide valuable insights into what support for students with ASD in special education classrooms can look like in practice.

*Key Words: Autism Spectrum Disorder; Assistive Technology; Visual Supports; Reinforcement; Applied Behavior Analysis*
Acknowledgements

I wish to acknowledge and thank my two participants; Connie and Erin. I appreciate their time and experiences that were used in the interviews. Most importantly, I am more appreciative of the passion that was evident throughout both experiences.

I would like to thank Dr. Shelley Murphy for all her support, expertise and guidance throughout this research study. She was helpful and went above and beyond to aid in the development of this project. Throughout the two year process, I was able to learn valuable lessons that I can take with me into my future teaching career. In addition, I would like to thank all my friends and family members who took the time to review and add suggestions to this research study. Each of you played a vital role in finalizing this study that I am so passionately involved within.

Last, this research study is for all the beginning and experienced teachers who wish to aid in the learning and development of their students living with Autism Spectrum Disorder. I hope they read this study and walk away with a base of strategies they can use to educate their students.
# Table of Contents

Exploring Teacher Practices: Supporting Students with Autism Spectrum Disorders in the Special Education Classroom ................................................................. 1

Abstract .................................................................................................................. 2
Acknowledgements ................................................................................................. 3

Chapter 1: INTRODUCTION.................................................................................. 5
  Introduction to the Research Study ................................................................. 5
  Purpose of the Study .......................................................................................... 7
  Research Questions ............................................................................................ 7
  Background of the Researcher ........................................................................... 8
  Overview ............................................................................................................ 9

Chapter 2: LITERATURE REVIEW .................................................................. 10
  Autism Spectrum Disorder ............................................................................... 10
  Assistive Technology ......................................................................................... 13
  Visual supports .................................................................................................. 17
  Conclusion .......................................................................................................... 19

Chapter 3: METHODOLOGY ......................................................................... 20
  Procedure .......................................................................................................... 20
  Instruments of Data Collection ......................................................................... 20
  Participants ......................................................................................................... 21
  Data Collection and Analysis .......................................................................... 22
  Ethical Review Procedures ............................................................................... 22
  Limitations ......................................................................................................... 23

Chapter 4: FINDINGS ..................................................................................... 24
  Meeting the Participants ................................................................................... 24
  Use of Visuals ..................................................................................................... 27
  Use of Technology .............................................................................................. 29
  Use of Reinforcements ....................................................................................... 31
  Discussion .......................................................................................................... 33
  Conclusion .......................................................................................................... 35

Chapter 5: DISCUSSION .............................................................................. 36
  Introduction ........................................................................................................ 36
  Implications ....................................................................................................... 36
  Implications for the Educational Community ................................................. 38
  Conclusion .......................................................................................................... 39

REFERENCES ................................................................................................. 40

APPENDICES ................................................................................................... 46
  Appendix A: Letter of Consent for Interview ................................................. 46
  Appendix B: Interview Questions ................................................................. 48
Introduction to the Research Study

*People are always looking for the single magic bullet that will totally change everything. There is no single magic bullet.*  
* -Temple Grandin

The quotes mentioned above are words from an adult living with Autism Spectrum Disorder. Temple Grandin is a famous, 67-year-old woman who completed her PhD in Animal Science at the University of Illinois. Grandin faced several battles with her speech and sensory problems (Grandin, 1992). Yet, she continued to press on with the help from families and teachers. Fortunately, since the 1940s our society is moving towards promoting inclusion and integration for students with exceptionalities. In a report by the Ministry of Education (2005) notes,

- Special education in Ontario has evolved in the context of a broad social movement advocating the closure of residential institutions, which had housed many persons with special needs, and the inclusion of these persons, with appropriate support services, as fully as possible, in the life of the community…

- Regular classroom teachers in Ontario serve a growing number of students with diverse abilities. (p.1-2).

There are many common exceptionalities that are seen within schools. There are students with developmental, intellectual, mental health needs and physical disabilities. According to a consultation paper for education and disability in the Ontario Human Rights Commission (n.d.),

- Figures for 1997 from the Ministry of Education and Training indicated that approximately half of all students identified as “exceptional” had learning
disabilities. There were also significant percentages of students identified as developmentally disabled, speech and language impaired, or ‘emotionally disturbed. (p. 10).

This study will focus on teachers who are working with students who have a developmental disability, specifically, Autism Spectrum Disorder.

Autism Spectrum Disorder (ASD) is a neurological disorder that affects the way an individual behaves, communicates and many of the social interactions individuals in engage within (Lord, Cook, Leventhal & Amaral, 2000, p. 355). First coined by Leo Kanner, he described ASD as an umbrella of varying abilities within disabilities. In a study by Volkmar and Pauls (2003) they write, “autism is a neuropsychiatric disorder characterised by severe and sustained impairment in social interaction, deviance in communication, and patterns of behavior and interest that are restricted, stereotyped, or both” (p.1133).

Onset is generally before the age of 3 years (Lord, et al., 2000, p.217). This wide range of a spectrum or umbrella suggests that each individual can be quite different from the next. As Lord et al., (2000) state, “autism is a heterogeneous condition; no two children or adults with autism have exactly the same profile” (p.217). For example, you may experience a student with low-functioning Autism who may be non-verbal and highly behavioral. Yet, on the other end of the spectrum you may find a student with Asperger’s who is high-functioning and is able to verbally communicate, but lacks social interaction skills.

Since this disorder tends to have many unique manifestations, educators individualize their instruction to meet their students’ unique needs. The literature suggests that some teachers may feel ill prepared to educate students with ASD. Winter
EXPLORING TEACHER PRACTICES

(2006) notes, “the most frequently cited reason for resistance is the lack of skills necessary to teach pupils with SEN…it would appear that where much has changed in our classrooms in relation to inclusion, gaps might still exist in teacher preparation programmes” (p. 85).

This study looks into the kinds of teaching strategies that educators currently use to support student learning.

**Purpose of the Study**

The purpose of this qualitative study is to investigate the kinds of strategies two teachers use within their classrooms to support their students with Autism Spectrum Disorder. In this study, two, in person interviews were conducted with educators who have their Ontario College of Teachers certification. Both educators currently teach within a self-contained classroom with a small group of students, all of which have a diagnosis of ASD. This study focuses on the use of technology, visuals and reinforcement in the classroom, all of which has been identified throughout the research study to help students with Autism learn more effectively. It was my intention as a researcher to learn from the outcomes of this study to improve my teaching practice.

**Research Questions**

The main purpose of this study is to answer the following research question: What strategies do teachers use to support their students with Autism Spectrum Disorder within the special education classroom.
Background of the Researcher

As an active worker in the field of Developmental Disabilities, I am currently working with learners who are living with Autism Spectrum Disorder. I am an Autism Consultant and work for a not-for-profit agency that supports individuals with Autism Spectrum Disorder and their families. Over the last five years, I have found that each individual with Autism is unique, exceptional and has distinctive learning characteristics. I have a specific interest in writing about this topic because it is one that I am closely affected and fascinated by, in addition to an interest to learn more about strategies that are effective. Having worked with many individuals with Autism I understand that there is so much they can offer to the world.

Many individuals with Autism Spectrum Disorder that are non-verbal and do not have a formal mode of communication, can be stigmatized in society as being unable to accomplish tasks. However, I am interested in investigating how teachers support their students to express their individual gifts and strengths, in spite of their communication delays and behaviours. This study is important to me as I am an advocate for helping and aiding the development of students living with Autism Spectrum Disorders. Being an Autism Consultant, I am aware that students with ASD learn best when they are in a structured environment. In addition, my experience has shown me that students with Autism Spectrum Disorder learn best when provided with visuals and assistive technology. Furthermore, I begin this research seeking effective strategies to aid student learning and become successful participants within their school community.
Overview

Chapter 1 introduces the research study. In addition, it discusses the main research question and it introduces the researcher and the background of the researcher. Chapter 2 presents the literature review. Chapter 3 discusses the methodology used for this study. It mentions the instruments of data collection, an overview of the participants and limitations of the research. Chapter 4 represents the findings through the data from interviews with two participants and it is presented in themes. Chapter 5 presents the discussion and the implications of the research study, future practice for educators as well as the researcher and any further recommendations for the educational community. In addition, applicable appendices and a list of references are found at the end of this research study.
Chapter 2: LITERATURE REVIEW

This study investigates the various strategies educators use to support students with Autism Spectrum Disorder (ASD) within the classroom. It examines the teaching strategies that two teachers used for their students with Autism Spectrum Disorder. The literature review presents an overview of the scholarly literature on ASD, assistive technology and visual supports.

Autism Spectrum Disorder

According to the literature, Autism Spectrum Disorder (ASD) is a neurological disorder. Levy, Mandell and Schultz (2009) write, Autism is “characterised by severe deficits in socialisation, communication, and repetitive or unusual behaviours” (p.1627). It affects different characteristics within individuals. There is no known cause for Autism, however, over the past few decades there has been a great deal of speculation that there are many potential reasons why children are born with Autism Spectrum Disorder, “the picture of the cascade of structural and biochemical events that culminate in the disorder is still not clear” (Szatmari, 2003, p.173). The literature states that Autism may be caused and influenced by:

- toxic environmental factors or epigenetic factors that alter gene functions, in turn altering neural tissue. Epigenetic factors can be specific aspects of the physical environment (e.g., biochemically active compounds) or specific types of psychological experiences (e.g., stress) that alter brain chemistry, turn genes off or on at specific
times during development, or regulate gene expression in other ways. (Levy, Mandell & Schultz, 2009, p.1632).

Therefore, it appears that there are environmental and genetic factors that contribute to the incidents of Autism Spectrum Disorders. Additionally, Autism is a spectrum disorder that ranges in the magnitude of behaviours and disorders from end to end. Rapin (1997) notes, “persons with autism are now considered to have one of a group of developmental disorders of brain function that have such a broad range of behavioral consequences and severity that they are referred to” (p.97). Autism Spectrum Disorder includes the following disorders: Aspergers, Retts Syndrome, Child Disintegrative Disorder, Pervasive Developmental Disorder-Not Otherwise Specified and Autism, “included in this classification, including Asperger’s syndrome, childhood disintegrative disorder, Rett’s disorder, and PDD not otherwise specified or atypical autism” (Volkmar and Pauls, 2003, p.1133). The revised version of the Diagnostic and Statistical Manual – Fifth Edition (2013) states,

“Using DSM-IV, patients could be diagnosed with four separate disorders: autistic disorder, Asperger’s disorder, childhood disintegrative disorder, or the catch-all diagnosis of pervasive developmental disorder not otherwise specified… Anyone diagnosed with one of the four pervasive developmental disorders (PDD) from DSM-IV should still meet the criteria for ASD in DSM-5 or another, more accurate DSM-5 diagnosis.” (American Psychiatric Association, 2013).

Levy, Mandell and Schultz (2009) write,

Autism is a neurodevelopmental disorder in the category of pervasive
developmental disorders, and is characterised by severe and pervasive impairment in reciprocal socialisation, qualitative impairment in communication, and repetitive or unusual behaviour. The Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) and the International Classification of Diseases, 10th edition (ICD-10), include autistic disorder, Asperger's syndrome, pervasive developmental disorder not otherwise specified (PDD-NOS), Rett's syndrome, and childhood disintegrative disorder as pervasive developmental disorders. (p.1627).

The authors have suggested that there are many areas that an individual is affected when diagnosed with Autism. Moreover, these three factors (communication, social interaction and behaviours) can be identified as the Triad of Impairments, “Autistic spectrum disorders share a triad of impaired social interaction, communication, and imagination, associated with a rigid, repetitive pattern of behaviour” (Wing, 1996, p.327). This recognizes that each factor is dependent on the other as seen in a person with Autism. For instance, a child that lacks verbal communication skills and does not have an appropriate way of communicating might act out in bouts of behaviours towards self or others. Cafeiro (2005) states, “difficulties in connecting can result in confusion, anxiety, and frustration that can further lead to behavior difficulties” (p.16). Moreover, Tissot and Evans (2003) write, “some researchers have proposed a link between the inabilities of an autistic individual’s ability to express his/her needs or wants, or understand when others express their needs or wants, and disruptive behaviour” (p.428). It is important for teachers to be aware of the needs of each student because they vary based on their individual exceptionalities. Cafeiro (2005) says,
Autism is a ‘spectrum’ disorder, which simply means that people it affects experience a wide range of strengths and needs, splinter skills, and learning styles. Each person with ASD possesses a unique array of gifts and deficits that the bottom of next profoundly affects their connection to others and to the world. (p. 25).

Therefore, educators should assess student needs and strengths in order to differentiate for their learning styles.

**Assistive Technology**

Assistive Technologies (AT) are commonly used equipment, objects or items for children with Autism Spectrum Disorder, “the term assistive technology device means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability” (Mechling 2007, p.252). These devices can provide help to students and aid in their learning. Cafeiro (2005) notes AT is a broad category that encompasses alternative and augmentative communication. Augmentative and Alternative Communication (AAC), “is any tool, device, picture, word, symbol, or gesture that compensates for expressive (outgoing) and incoming (receptive) communication deficits” (Cafeiro, 2005, p.4). Various types of AAC include, “visual schedules, visual prompts, communication boards, Picture Exchange Communication System or PECS [Bondy & Frost]” (Cafeiro, 2005, p.7). Newton and Dell (2011) go on to state, Assistive Technologies are anything that have a “mobile touch screen devices such as the iPod Touch, iPhone, and iPad [that] offer promising enhancements to
teaching and learning” (p.55). The use of AT can also aid as a visual device since the product it produces on the screen can be visually interpreted. In addition, AT are easy to use, inexpensive and convenient. Newton and Dell (2011) suggest, portability, speed, and affordability, combined with the highly engaging nature of many of their applications (apps), present intriguing alternatives to expensive high-tech tools. These hand-held devices offer individuals with and without disabilities easy access to learning opportunities, information, organizational systems, communication, and emotional supports (p.55).

Assistive technology can be a helpful tool in guiding, mentoring and teaching students with Autism. Since many individuals with Autism are visual learners it would be helpful for teachers to integrate more AT within their classroom. A useful app called “text-to-speech to speech-to-text,” can be helpful for those who need extra help writing (Newton and Dell, 2011, p.57). Speak it! Text to Speech (retrieved from Future Apps, Inc., 2009) is a text-to-speech app that allows students to type their own text or import documents such as emails, Web pages, or PDF files. These apps were useful for teachers and students with Autism because it provided ways for students to communicate and interact with others. More importantly, these tools aided in accommodated and modified ways of inclusively teaching students. A new movement in Europe, called E-inclusion, uses technology to break down barriers and create an inclusive atmosphere for students with disabilities, “E-inclusion is the term used here to describe the use of digital technologies to minimize or even remove those learning difficulties” (Abbott, 2007, p.2). E-inclusion is a progressive movement used to help integrate and include students in digital technologies.
Assistive Technology can also be used to give students with Autism an opportunity to communicate their thoughts. Communication is a struggle that most individuals with Autism face. Research states, “communication has been described as the core deficit for people with autism” (Cafeiro, 2005, p.15). Assistive Technology can be a great tool to help aid students’ ability to communicate with others. AT has been described as “technology that can enhance the performance of persons with disabilities by augmenting an individual’s strengths or providing an alternative mode of performing a task to compensate for the effects of a disability” (Mechling, 2007, p.253). Furthermore, many behavioural issues occur when individuals do not have an appropriate mode of communication, AT can be a helpful and appropriate tool to use to change these patterns. Research suggests, “increased independence and the ability to manage one’s own behavior and task performance continue to be areas of concern when working with persons with disabilities” (Mechling, 2007, p.252). However, if they were to use AT, individuals with Autism might have the opportunity to become more independent by using devices on their own, in turn, asserting their own voice. In a study by Mechling (2007) argues, AT can promote independence when completing activities. In addition, “research has shown that assistive technology can facilitate learning, increase access, and serve as a tool to compensate for specific challenges associated with a disability” (McGregor & Pachuski, 1996), also using AT is an inclusive tool for students with Autism to integrate them within mainstream classrooms and with other students in their class since it allows them to engage in age and socially appropriate tools to communicate. An example of one of these AT programs is called Proloquo2Go. It can be bought through the Apple Store and used on the Apple devices such as the iPad, iPhone and iTouch. Students with Autism who have Proloquo2Go can use this app to begin to learn
how to communicate with others. Brittain (2012) writes, “studies on this program have demonstrated efficacy in teaching children with autism to make requests and use the device” (Brittain, 2012). The app uses pictures that are already generated or can be created by the owner to facilitate the communication of that person. It was argued in a research study by King et al (2014) that not only can the iPad with the Proloquo2Go application be used with children with limited vocal output to acquire a requesting repertoire, but it may also assist in increasing vocal requesting for this population (King et al., 2014, p.1118).

In a mixed method, ethnographic study (Hayes et al., 2010), a research team looked at how Assistive Technology can be used to help teachers develop visuals for students with Autism Spectrum Disorder. They specifically looked at the ways that technology can be developed further to assist in the implementation of the use of visuals in the classroom. The researcher used actual teachers and students in parts of the study to observe students while they used the Assistive Technology. However, in parts of the study they use a controlled research group. From including actual students with Autism, the researcher lacked the ability to identify the true need and impact of the use of these devices. In fact, the researcher only used students with Autism during the observation phase. Therefore, the researcher’s findings do not portray a clear depiction of the use of these devices.

The three devices that are used in this study by Hayes et al (2010) are called, Mocotos, Vsked, and SenseCam (p.673). After collecting the data from a range of interviews, fieldwork and participatory design discussions and focus groups, the researcher concluded that each device that is used for a student must be flexible and customizable to meet the needs of the student. Hayes et al (2010) suggest, students with Autism have varying needs and each goal needs to be carefully identified and be flexible
based on their progress (p.673). Furthermore, it is evident that preparing individual based goals is important to the success of the student, as well as, monitoring their progress. By doing this, teachers will have an idea of the level the student is at and modify lesson plans and goals accordingly.

**Visual supports**

Students with Autism Spectrum Disorder have been termed visual learners by many researchers including Rogers (2005) who suggests that “individuals with autism spectrum disorders (ASD) frequently use visual supports to make sense of the environments in which they function (Rogers, 2005). This demonstrates that the best way to teach students with Autism is by implementing visuals into lessons. Tissot and Evans (2003) note, “visual learners are children that process and retain information better if it is presented in a format where it is written down and can be seen, as opposed to information that is primarily heard” (p.426). Visuals help students understand concepts in various ways. Van Laarhoven et al (2010) state “learners can use visual supports to help them communicate, establish predictability in carrying out daily routines, acquire new skills, and become more independent in and across a variety of environments” (p.195).

In an article by Tissot and Evans (2003) they quote another authors work noting, “the use of visual systems can strengthen the child’s understanding of the communication in his/her environment” (p.426). The commonly used visuals within this research study will look at: pictures, First Then Boards, visual schedules, visuals cards, word strips and task analysis. Van Laarhoven et al (2010) suggest that, “picture prompting strategies have been shown to be effective for teaching or prompting complex behaviors…” (p.196). In a
study that look at a triad of students with Autism, Pierce and Schreibman (1994) used multistep pictures based on task analyses to teach daily living skills such as making lunch, getting dressed, and setting the table to three young children with autism. Each step in the task analyses was represented with picture prompts and was used while the participants completed the tasks (Pierce and Schreibman, 1994). After the study was complete, the authors reported that each child acquired the targeted skill and was able to complete the tasks independently by following the picture prompts, even when the order of pictures was changed. The study shows using visuals to help the students meet their goals was successful by implementing visuals in their daily tasks. Additionally, Van Laarhoven et al (2010) continued to discuss how video modelling can be used to help students with Autism learn effectively. The researcher’s used two children with moderate to mild Autism to identify if using video modelling was an effective tool for students with Autism. The results showed that using video modelling was as effective and in some cases more effective than using pictures in teaching these two individuals. They state “video prompting appeared to be somewhat more effective than picture prompting across most dependent measures, especially when efficiency measures were analyzed” (Van Laarhoven, et al., 2010, p.201). Henceforth, this research identified the use of different visual supports to aid in achieving the students goal. It is important to note, that a visual support like pictures may work for one student but not for the other student. In that case, teachers must be aware of the ability and needs of their students to adjust and implement different visual supports.
Conclusion

The literature review has formed a base for my data collection and the remainder of this research study. The remainder of this research will focus on the use of assistive technology, the use of visuals, as well as, the use of reinforcement to support students with Autism Spectrum Disorder.
Chapter 3: METHODOLOGY

Procedure

This chapter outlines the research methodology used in this study. This research is a qualitative study that looks at teaching methods educators use with students who have a diagnosis of Autism Spectrum Disorder (ASD). A qualitative study (Creswell, 2013) was used to focus on understanding the essence of the experience and to study several individuals that have a shared experience. The shared experience in this research study is teachers’ work with students who are living with ASD.

The literature review supports the data collection and analysis. The data was collected through two in person interviews of Ontario Certified Teachers who have several years of experience educating the population of students with Autism Spectrum Disorder. This chapter presents instruments of data collection, an introduction to the participants, data collection and analysis and limitations of the research. This chapter ends with a summary of the methods used in this qualitative research study.

Instruments of Data Collection

For this research study, two participants were interviewed. Data was collected through two semi-structured interviews. The interviews ranged from 40-55 minutes in length. The interviews were digitally recorded during the in person meetings for accuracy. Each participant is an Ontario Certified Teacher. Participating teachers were given a hard copy of the list of questions to follow along during the interview. The interview questions (See Appendix B for Interview Questions) were developed based on
the central research question: What strategies do teachers use to support their students with Autism Spectrum Disorder within the special education classroom? The interview questions focused on the participant’s professional background experience, strategies they use within the classroom and how they created inclusive environments. Additionally, follow-up questions pertaining to the research study were also asked.

**Participants**

In order to study teaching pedagogy that is effective for students with ASD, it was important to find participants who were innovative in their teaching methods and passionate about teaching a unique population of students. Therefore, for this research study, participants were selected based on three criteria: (a) must have current experience teaching students with ASD; (b) teachers who were recommended as highly skilled in their area; and, (c) can be core teachers or resource teachers.

For this research study, I interviewed a junior/intermediate (grades 4-10) teacher and a senior (grades 11-12) teacher within the Ontario school system. Each educator came equipped with their own unique experiences teaching students with ASD. One participant teaches within a Section 23 classroom in a Secondary School. Toronto District School Board notes,

Students in Section 23 Programs may be either resident or day clients of the agency. Section 23 programs provide individualized programming in hospitals, group homes, custody facilities, treatment facilities and classrooms in community schools. The length of time in any given program varies according to the needs of
the student, and may involve an assessment period followed by long or short-term treatment. (Special Education Programs and Locations (n.d.).

The other participant teaches within an all special needs Elementary School where the population has diverse, physical and intellectual exceptionalities.

**Data Collection and Analysis**

Participants were notified and signed off on a waiver stating the interview will be digitally recorded for accuracy. After each interview, additional notes were taken and analyzed along with the digital recordings. The data collected through each digital recording was transcribed, analyzed and coded into relevant themes. For the digital recordings, the researcher listened to the digital recordings multiple times to ensure transparency and accuracy in the data. The digital recordings were transcribed verbatim from the interview. The researcher coded relevant themes and subthemes throughout each transcription, by highlighting and making notes.

**Ethical Review Procedures**

This research study adhered to the stringent protocols outlined by the Master of Teaching program at OISE. Participants were personally chosen for this research study because of their experience teaching students with Autism Spectrum Disorder. Prior to the interview, research participants were provided with information regarding the purpose of this study and the importance of the researcher maintaining anonymity and confidentiality. Hence, pseudonyms are used throughout the research study to protect the teacher’s anonymity. Research participants were provided with letters of consent in
which they were required to read and sign if they agree to participate in the interview
(See Appendix A for Consent Form).

**Limitations**

Primarily from the constraints of the Master of Teaching program, there were
several limitations to this study. These limitations include; a selective literature review, a
small sample size, lack of generalizability and researcher bias.

I realized, as a researcher, the articles I chose for this research study were limited
in number due to the parameters of the MTRP requirements. However, I ensured that the
literature was relevant to the research. Most of the articles were found within the last 10
years. After reviewing the interview questions, they were limited in number to the scope
and size of the requirements of the MTRP. There were only nine questions with some
sub questions used within this research study.

This research study had a small sample size which posed another limitation. The
data collected was specific to two participant experiences teaching students with Autism
Spectrum Disorder. By using only two participants, the research study was not
generalizable nor representative of the general population of teachers. Moreover, I
intentionally sought out educators who were currently teaching students with Autism
Spectrum Disorder to complete this study.

Furthermore, my own experiences and understandings of Autism Spectrum
Disorder have in many ways influenced my interpretations of the findings. These
interpretations were influenced by the personal and professional practices I have
experienced.
Chapter 4: FINDINGS

This qualitative study investigates teaching pedagogy for students with Autism Spectrum Disorder (ASD). The chapter begins with an introduction to each of the participants and presents the predominant themes which emerged from the data. The predominant themes were use of visuals, use of technology and use of reinforcement.

Meeting the Participants

For the purposes of this research, two participants were interviewed. Both participants are teachers who were working in specialized settings at the time of the study. Connie is a Secondary teacher who has dedicated many years teaching students with diverse abilities; including, students with exceptionalities. Erin is an Elementary teacher within a culturally diverse community. Both participants have a classroom of up to six students who all have Autism Spectrum Disorders.

Connie

Connie is a Secondary School teacher within a large, urban school board. In her Section 23 classroom, she has a class of four students all of which are living with Autism Spectrum Disorder. A Section 23 classroom “provides individualized programming in hospitals, group homes, custody facilities, treatment facilities and classrooms in community schools” (Special Education Programs and Locations (n.d.). Connie considers herself a new teacher. She has been teaching for six years and specifically has been teaching students with special needs for the past four years. Connie has taken a qualification course on the topic of special education. This course is the first in a series
of three on the topic of supporting students with special education needs. She is motivated by workshops and keeping abreast of current research in education and strategies for individuals living with Autism Spectrum Disorders. She has recently completed a three day program in Applied Behavioural Analysis (ABA) which teaches practical ways in aiding student development and learning. Judd (2007) notes,

Applied Behavioral Analysis focuses on objectively defined, observable behaviors of social significance; it seeks to improve the behavior under study while demonstrating a reliable relationship between the procedures employed and the behavioral improvement; and it uses the methods of science—description, quantification, and analysis (p.297).

In addition, Connie has also taken a two day training in visual communication called Picture Exchange Communication Systems (PECS). The PECS program helps teach and provide a form of communication for students. Bondy and Frost (2001) explain, “PECS is a training system that was developed to teach children with ASD a rapidly acquired, self-initiated functional communication system” (p.727). Connie has also taken several single day workshops. During her undergrad in music therapy, she took some electives that were geared towards special needs.

Connie started off her teaching career as a music teacher at a school for students with special needs. Prior to teaching students, she also worked with adults with autism as a music therapist. Connie remains passionate about inspiring and teaching students with Autism Spectrum Disorder to lead valuable lives in the community. Connie notes,

in reality our time with them is limited and so you really have to sit down and think what is the most important stuff for these kids to be learning. It’s probably
not counting or identifying numbers. To me, it is communication. Then, personal and social development and life skills. To me those are the things to be focused on.

**Erin**

Erin has been teaching for the past three years within a large and culturally diverse community. Within these three years, Erin has been teaching students with special needs for two and half years. Like Connie, Erin strives to upgrade her knowledge by continuously educating herself. She attends many workshops, seminars and trainings. Erin has also completed Additional Qualifications in Special Education Part 1 and 2. Additional Qualification courses allow educators to extend and expand their knowledge on various subjects and topics. The University of Toronto website states,

Additional Qualification (AQ) courses can qualify you to teach in other divisions/subject areas and help you improve your current teaching skills. AQ courses help educators meet the needs of a variety of learners, adapt to the changing curriculum, incorporate current research into daily teaching practices and integrate technology (University of Toronto, n.d.).

During her teacher education program, Erin attended two workshops at the Geneva Center for Autism that included; “ABA in the Classroom and at Home,” “Intro to Asperger’s” and “Intro to Autism.” The Geneva Center for Autism is an organization that provides several different types of supports for individuals and their families living with Autism (Geneva Center for Autism, n.d.).
Use of Visuals

Both Erin and Connie rely heavily on the use of various types of visuals for their students within their teaching. For example, visuals were noted several times within each interview. From the conversations with Erin and Connie it was apparent that there were different types of visuals used in varying degrees in several different situations. Throughout this study, visuals can be broken down into what is called First-Then Boards, Visual schedules and Visual cards to state expectations. These are all visual aids used to help the student become aware of a routine or schedule of the day. It increases the predictability of the student’s day. A First-Then Board strategy,

allows the ‘first’ expectation (whether a task, activity, or assignment) to be modified, as needed. The modification is in terms of task completion and amount of prompting, in order to accommodate the students’ daily fluctuations in his or her ability to process incoming information. Then he or she can move on to his or her next visually scheduled task activity (Judd, 2007, p.480).

During the conversation with Connie, she explained the importance of using visuals with her students,

They are all very visual learners so we have to play to that like visual schedules and visual outlines of rules. They respond really well to routine so again we have to fill the day around routines and preparing them for transitions. They are all good at understanding that when we have laid out clear rules or clear outlines that is the expectation, and they are good at following that.

Both Connie and Erin believe that using visuals throughout the day is one of the most helpful tools in planning and preparing for students. Erin mentions, “using
visuals in the classroom is a primary thing.” She feels it aids and develops independence in her students. In addition, Erin feels using visuals can be used as “an ABA practice, generally for the classroom, but also for individual schedules.” Erin continues to use First-Then Boards and visual schedules for students that are not on task or may be in a problematic dilemma. Erin discusses, “…along with the break we will use the First-Then Boards and because it is so highly visual [he] understands that.” She refers to a student in her class that struggles at times with behavioral issues. The visuals, such as a portable visual schedule is helpful for de-escalating the behaviors.

On the topic of visuals, Connie feels as strongly about how supportive they are. As she said, “[they] all are very visual learners so we have to play to that like visual schedules and visual outlines of rules.” Connie uses and implements visuals in the form of a visual card, especially when she needs to identify rules and expectations to her students. A visual card is another form of visual aid used in order to help students understand their daily routine, expectations or the next step in a sequence of tasks. In the following quote, Connie uses visuals to inform students of the next steps in an activity. She explains,

I used a lot of visuals where I create the visual card and implement it for rules for activities. After we do exercise time, I implemented a relaxation quiet time for 2 minutes because they are all very high strung and I want a way that we can calm down before we transition back to the classroom. I made a sheet with visuals on it that said ‘relaxation.’ On the mat, I have a photo that said we can choose to sit down or we can lie on our backs. They [students] can choose a photo and then the last step is we need to be quiet and I show a picture of someone being quiet. It works really well because once you put some visuals to it, it’s real.
Connie provides her students with choices using visuals and depends on visuals throughout the day to help students succeed and prevent challenging behaviours from occurring.

**Use of Technology**

Both Connie and Erin rely heavily on the use of technology. Three of the primary reasons they rely so greatly on technology is because they believe it is both engaging and motivating as well as a productive system to engage in communication which promotes independence in their students.

**Engagement/Motivation**

According to both participants, technology through the iPad, Promethean Board or SMART Board creates a stimulating, engaging and motivating community for learners to participate in the task. Erin mentions, “it’s [technology] both a reinforcement tool and engagement tool.” Connie also feels strongly about the benefits of technology use. She says, “schedules, using technology mostly, is different and motivating mostly because there is usually a program on the SMART Board or iPad that they think is really cool.” Both Erin and Connie found that students were drawn to opportunities to manipulate images with their fingers or to view bright animations on the screen. As Erin commented, the vast majority of my teaching is using the Promethean Board. All of our activities are on there so they can use manipulatives and various engagement tools. The kids can move stuff around and it can be tailored to their interests. They can even read books on there and be able to pair words and pictures. It is
large and engaging and they are all highly motivated by technology. Therefore, using those visuals on technology are helpful.

Erin is an avid user of technology and implements it into her daily routine, which is reflective of her student needs. Erin feels that technology is one of the most important tools for helping and aiding student development. She appreciates the flexibility of using the Promethean Board to facilitate lessons.

Interestingly, Connie portrayed a similar view, using technology to supplement her lessons to become more engaging. She says, “I can really build that into once we finish this boring math stuff (or whatever we are going to do) and move onto the next activity. For instance, first math on the iPad and then we are having snack.”

Connie uses technology paired with a First-Then Board to create motivation and engagement in her students. Therefore, the student knows that when they have completed their assigned task they will then receive their reward. She motivates students to complete the task by using applicable technology.

**Communication**

In addition, technology is used as an aid to create motivation and engagement in students, as well as, helping in the development of communication. Both Connie and Erin use either the iPad, Promethean Board or SMART Board as a way to initiate communication and engage and motivate students. For instance, recently in Erin’s class, while reading a book from an online website entitled, ‘Reading A-Z,’ Erin was targeting a question towards another student in regards to reading comprehension, and incidentally, a student who is more shy spoke up and began to answer the questions. Erin said,
actually one day, I was using a book with Blue Group (James, Wilburt and Kevin). It was a book I was targeting for James so it was about ‘going places’ and different modes of transportation. I was reading and talking to James and I asked him a statement for him to fill in the blank, ‘you can go on a ____’ and Kevin interjected ‘plane’ and so he just jumped in there with all these words.

This was a huge success for this individual. Similarly, in the same class, Erin utilizes the iPad to help students communicate their needs and wants. Connie also finds unique ways of aiding her students in developing effective ways of communicating by using the iPad and SMART Board. Recently, she has found an app called, Autism iHelp. Connie mentions,

I found this app series called Autism iHelp. I like it because it’s not cluttered. It’s very clean formatted, it uses actual pictures of the item. One of my students speaks but very quietly and it’s hard to hear him but for some reason he likes the voice to read it out and say “bowl” and then he repeats it in a really loud and clear voice.

Using this app has helped her students in pairing appropriate and correct words and pictures, thereby building their own vocabulary.

**Use of Reinforcements**

Both Connie and Erin have highlighted the importance of reinforcement within their classroom. They use it in order to provide students with positive feedback on their behaviors. Erin and Connie provide positive reinforcement through social praise and token economies (also known as: token system, token board). Positive reinforcement is
provided for a student once they have exhibited a good response in order to encourage that same behavior in the future. This can be monitored and encouraged by using social praise and token economies. Token economies are systems used to track the positive responses or behaviours from a student. Delmolino and Harris (2013) comment,

once you know what motivates your child, you can provide him with that item or experience (reinforce him) when he does his best to respond to your requests. By reinforcing his behavior, you make it more likely that he will follow your requests in the future” (p.39).

Connie mentions that having a token system and providing social praise is important in building on preexisting skills and reinforcing those skills for the future. She explains,

[I give] lots of reinforcement when they are doing things right or appropriately. Like a lot of our goals end up being life skills, so not just educational, but they are still educational because it is part of their IEP. I’m lucky because in the IEP I get to choose what to teach which I think is important for them. Lots of positive attention, attention alone, or using a token system. It’s really effective.

Connie is also an avid user of token systems with her students. She uses token systems to avoid any problematic behaviors that may arise. For instance, students are provided with tokens when they are sitting appropriately at their desk. Each student has outlined a group of visual cards that represent the classroom expectations on their desk. Each students reward at the end of a certain amount of tokens will depend on what is most motivating and reinforcing for that student. In addition, Connie uses a lot of verbal reinforcement, such as, “I love the way you’re walking with staff in the hall,” or “I love the way you’re sitting quietly.” Connie believes that verbal reinforcement goes a long
way for her students. She believes it is important for the verbal reinforcement to be specific to the behavior.

   Erin readily uses positive reinforcement in her classroom through verbal praise. She finds opportunities to catch her students being good and immediately reinforces their appropriate behaviors. She finds it important because she hopes it will encourage the same positive behavior in her students for the future. In addition, Erin also uses technology as a tool for reinforcement. Once a student has completed a reading task they can play on the iPad for an indicated time limit. Erin verbally sets the goals clearly with her student’s one on one. She may say, “After you read x pages you can play y game.” This helps to convey the expectations very clearly for the student.

**Discussion**

It is evident that both teachers use similar strategies that they have seen to be effective for their students living with Autism Spectrum Disorder. Connie and Erin integrate the use of visuals, technology and reinforcement within their lessons to effectively educate students. This section will situate the findings within the literature.

First, both participating teachers note that the use of visuals was regularly implemented within their lessons. Connie remarks, “I use a lot of visuals.” Similarly, the literature supports the use of visuals to aid in development for students with Autism Spectrum Disorder. In a study by Ganz et al (2014) note, “the use of visual scripts for individuals with disabilities, particularly those with autism spectrum disorders, has been demonstrated to be effective” (p.3).
Next, Connie and Erin discuss how they implement the use of technology for their students with ASD as an effective and useful strategy to their current teaching practices. Connie uses technology such as the iPad and SMART Board on a daily basis to provide engagement and motivation for her students. Connie comments, “all three of them [students] are really motivated by the iPad.” Additionally, Connie uses technology in her classroom as it is a novel tool for her students. She notes,

I think when I do technology with them it’s a novelty right. It’s fun and I guess I get to swipe my fingers around and things move. It’s the same as the SMART Board which we use a little bit as well you know there’s some cause and effect to it, like I touch something and it does something, I did that, wow that’s really cool. I think it’s a bit of a novelty.

This is in line with the literature by Ganz et al (2014) as it argues, “The iPad®-based visual scripts led to communication without the intrusion of prompts from another person” (p.10). Similarly, Erin notes she uses Flip Charts on the Promethean Board as it is something that is highly motivating for her students. She says,

the vast majority of my teaching is using the Promethean Board. All of our activities are on there so they can use manipulative, they can use various engagement tools. The kids can move stuff around and it can be tailored to their interests and even reading books on there and be able to pair words and pictures it large and engaging and they are all highly motivated by technology so using those visuals are helpful.

Interestingly, both Erin and Connie have similar experiences using technology as an effective teaching practice that connects with the literature.
Last, both participating teachers dually mention the use of reinforcement within their teaching practices which is clearly mentioned within the literature. Connie uses verbal reinforcement like specific, social praise. For instance, she may say, “I love the way you’re walking with staff in the hall,” or “I love the way you’re sitting quietly.” Interestingly, Connie uses a token economy system that Erin does not mention in her interview. Nonetheless, both teachers use technology as a motivating tool and reinforcer. Erin notes, “When I can get away with it [technology], it’s [technology] both a reinforcement tool and engagement tool.” The literature notes comparable findings. In a study by Ennis-Cole (2012) writes, “When technology tools match desired learning outcomes, they provide the opportunity to teach content in more engaging, more interesting, and more visually appealing formats” (p.54). This intentionally demonstrates that a tool like technology can become a reinforcer as well.

**Conclusion**

This chapter has provided an introduction to each of the participants as well as an overview of the predominant findings in the form of theme and subthemes. The three predominant themes were use of visuals, use of technology, and use of reinforcement. Both Erin and Connie shared their common practices and their rationale for using particular strategies with their students.
Chapter 5: DISCUSSION

Introduction

This qualitative research study looked at the experiences and perspectives of two educators who teach students with Autism Spectrum Disorders (ASD). The central question that this research asks is: What strategies do teachers use to support their students with Autism Spectrum Disorder within the special education classroom? This chapter will reflect implications for the researcher as well as future practice for educators. Additionally, this chapter will discuss recommendations for teachers.

The findings that arose within this research study showed that these two educators were responsive, proactive and progressive in their teaching techniques. The teaching techniques and strategies mirrored those that are represented within the literature. Both teachers used similar teaching strategies to teach their students with Autism Spectrum Disorder. Participants used Assistive Technology such as the iPad, Promethean Board or SMART Board to aid in student development. They both used various visuals tools including; First Then Boards, visual schedules and visual cards as cues for students, as well as, reinforcement as useful strategies to support their pedagogy. In all, both teachers shared the passion, creativity and enthusiasm for using these strategies within the classroom to educate students with ASD.

Implications

Implications for the Researcher

As a beginning teacher, the research has provided various strategies that are in line with the literature. Although only two participants were interviewed for this research
study, it was pleasing to listen to how both classrooms use visuals, technology and reinforcement for effective behaviours and how similar their strategies were when educating students with Autism.

As a pre-service teacher, the information gained from this research study has provided me with an opportunity to learn more about strategies that I can use in my classroom in the future. I anticipate the day when I can use visual cards as Connie does to teach expectations to students, or using Google Maps as Erin uses to map out the route for a walk prior to starting out on a journey. Furthermore, using reinforcement to support positive behaviours and actions is a tool that will aid my teaching pedagogy to encourage the likelihood of positive behavior recurring.

**Future Practice**

The findings from this research study provided practical strategies for pre-service and experienced teachers. As I reflect on my research and my own experiences, I was able to make comparisons to my own professional opportunities through both experiences. As an Autism Consultant, I see first-hand the need to use visuals, technology and reinforcement to aid in student development. During my interviews both participants focused on the three concepts listed above to create an effective learning environment. For instance, using visuals can provide students with the predictability of the student’s individual day as well as the events that are occurring in school. Moreover, visuals, such as a First Then board, can be used to help students when stuck in a transition or when engaging in problematic behavior. Both participants feel that using visuals, such as a visual card, is helpful in preventing disruptive behaviors as well as aiding independence in students.
As I begin a new career within the field of education, I look forward to the day when I am a Special Education Teacher. Through this research I have learned strategies that coupled with my practice teacher placements I can implement in my own classroom. I have also learned valuable strategies and techniques that I will implement in my future teaching practices. However, among that learned I will walk away knowing there are passionate educators that are willing to go beyond their expected obligations to help their students succeed. That is the passion that is instilled in me and my ever growing awareness about how to better support and educate students with Autism Spectrum Disorder.

**Implications for the Educational Community**

The findings from this study highlight the importance of both beginning and experienced teachers continuing to refresh their own education to keep up with strategies that are effective for students with Autism Spectrum Disorder.

This research study is not a list of strategies that educators must use if they have a classroom of students with ASD. Rather, it is my hope teachers use this research study as a guide to building their own teaching pedagogy that is effective for their students based on individual strengths and needs.

Furthermore, I strongly suggest educators continue to share resources and educate one another which will in turn help our students succeed.
Conclusion

The goal of this research study was to provide a glimpse into the world of teaching students with Autism Spectrum Disorder and to encourage educators to try these methods in addition to pre-existing strategies of their own.

To summarize, writing this final chapter has helped me to reflect upon this entire experience of studying the experiences, perspectives, and practices of two teachers who have students with Autism Spectrum Disorders in their classrooms. This process has helped me understand the planning and delivery process of educating students with exceptionalities. The research shows that having a collaborative team is important; in addition to, exchanging ideas, suggestions and providing support to one another is in the best interest of the student. As I am about to enter into the teaching profession I see how important it is to work as a team and to be constantly upgrading one’s own knowledge and skills to best support a student with Autism.

As a beginning educator, my vision is to take these strategies and experiences from Erin and Connie and use what I have learned from them to support my own students based on their individual needs.
REFERENCES


DOI: 10.1177/1088357613504991


DOI: 10.1007/978-1-4899-2456-8_6


DOI: 10.1007/s00779-010-0294-8


Special Education Programs and Locations. (n.d.). Retrieved April 5, 2015, from http://www.tdsb.on.ca/EarlyYears/SpecialEducation/Programs.aspx


DOI: 10.1002/bin.1384


DOI: http://dx.doi.org/10.1136/bmj.312.7027.327

Appendix A: Letter of Consent for Interview

Date: ___________________

Dear ___________________,

I am a graduate student at OISE, University of Toronto, and am currently enrolled as a Master of Teaching candidate. I am studying effective teaching methodologies for students with Autism for the purposes of investigating an educational topic as a major assignment for our program. I think that your knowledge and experience will provide insights into this topic.

I am writing a report on this study as a requirement of the Master of Teaching Program. My course instructor who is providing support for the process this year is Dr. Arlo Kempf. My research supervisor is Dr. Shelley Murphy. The purpose of this requirement is to allow us to become familiar with a variety of ways to do research. My data collection consists of a 40 minute interview that will be recorded. I would be grateful if you would allow me to interview you at a place and time convenient to you. I can conduct the interview at your office or workplace, in a public place, or anywhere else that you might prefer. The contents of this interview will be used for my assignment, which will include a final paper, as well as informal presentations to my colleagues and/or potentially at a conference or in a publication.

I will not use your name or anything else that might identify you in my written work, oral presentations, or publications. This information remains confidential. The only people who will have access to my assignment work will be my research supervisor, my research group members, and my course instructor. You are free to change your mind at any time, and to withdraw even after you have consented to participate. You may decline to answer any specific questions. I will destroy the tape recording after the paper has been presented and/or published which may take up to five years after the data has been collected. There are no known risks or benefits to you for assisting in the project, and I will share with you a copy of my notes to ensure accuracy.

Please sign the attached form, if you agree to be interviewed. The second copy is for your records. Thank you very much for your help.

Yours sincerely,

Natasha Singh

natashashalini.singh@utoronto.mail.ca
Instructor’s Name: Dr. Arlo Kempf  
Email: arlo.kempf@utoronto.ca

Research Supervisor’s Name: Dr. Shelley Murphy  
Email: shelley.murphy@utoronto.ca

Consent Form

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw at any time without penalty.

I have read the letter provided to me by Natasha Singh and agree to participate in an interview for the purposes described.

Signature: ______________________________

Name (printed): ______________________________

Date: ______________________________
Appendix B: Interview Questions

1) How long have you been teaching?
   a. How long have you been teaching students with Autism Spectrum Disorder?
   b. Can you talk about any specialized training you have within your teacher education program or beyond related to special education or teaching students with ASD?
   c. What drew you to teach this class?

2) How do you deal with behaviours in the classroom? (Please provide an example)

3) What are some effective teaching methods/strategies you use on a regular basis with your students?
   a. Why do you think these are effective teaching strategies?
   b. Do you use the principles of Applied Behavioral Analysis in your teaching? If so, can you give an example of how you implement these principals?

4) Can you talk about parent involvement related to their child's learning, in home?

5) Can you describe your class for us, in terms of your students and their strengths and challenges?

6) Can you talk about how you go about planning for your students with autism? What factors do you consider? (i.e. IEP's, assessments, discussions with parents, former teachers etc.).
7) Do you work with any Educational Assistants/SERTS/Teaching Assistants/CYW?  
   If so, what is their role? How do they aid in student learning? 

8) Can you talk about the ways, if any, students are included/integrated into the 
   greater school community? 

9) Is there anything else you would like to tell me about your class or teaching 
   methods?