IPADS AND SELF-DETERMINATION

A Thesis

Presented to the

Faculty of

California State University, Fullerton

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

in

Special Education

By

Elise Marie Flocken

Approved by:

Debra Cote — 4/17/12

Dr. Debra Cote, Committee Chair — Date
Department of Special Education

Steve Aloia — 4/17/12

Dr. Steve Aloia, Member — Date
Department of Special Education

Suzanne Robinson — 4/17/12

Dr. Suzanne Robinson, Member — Date
Department of Special Education

ABSTRACT

Strategies for developing effective transition practices for students with developmental disabilities have evolved as a result of the Individuals with Disabilities Education Act. Transition must follow a meaningful process to appropriately assess individual students and further meet their needs. Parent and student involvement are a critical component of transition planning giving the team insight. Additionally, appropriate and individualized transition goals are developed, taking into consideration, with student and team input. In recent years, more and more students are attending adult transition programs and leaving the structure of a self-contained classroom. Some students utilize augmentative communication in the form of visual and picture communication. Given the direction that technology is heading, new modalities of assistive technology and augmentative communication can benefit all students with disabilities, specifically those that are transition-age as suggested by research.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

With thanks to
Dr. Debra Cote, Dr. Steve Aloia,
and Dr. Suzanne Robinson

CHAPTER 1

INTRODUCTION

The need for technology skills is imperative in today's technological world in order for students to be able to participate in the work force (Edyburn, Higgins, & Boone, 2005). Transition from high school into adulthood is a critical time for students with disabilities. These young adults face substantial difficulties in securing jobs, independent living, accessing post secondary education, and even participating in their own community (Johnson, Stodden, Emanuel, Leucking, & Mack, 2002). It is the school's responsibility to support students in developing self-advocacy skills, decision-making skills , and interpersonal skills ultimately fostering self-determination (Johnson et al., 2002).

Bailey et al. (2005) noted that assistive technology permits students to more effectively and efficiently complete tasks that otherwise would be a challenge, while enabling them to become more active class participants (Edyburn et al., 2005). Given that technology is the future and that today's students are no longer the children that our education system was historically designed to teach, it is important for educators to find appropriate, meaningful, and engaging ways to teach their digital native students (Prensky, 2001).

Nochasjski, Oddo, and Beaver (1999) reveal that students with developmental disabilities need access to technology in order to benefit from it. It is important to

recognize that "transition planning for students using assistive technology empowers the student to participate at a level appropriate to age and ability" (Edyburn et al., 2005, 724).

Research Questions

Student Outcome

1. How does the implementation of an iPad facilitate conversational exchanges in transition-age students with developmental disabilities?

2. How does the iPad promote self-determination skills in transition-age students with developmental disabilities?

Parent Perception

3. What are parent perceptions about their child's ability to self-advocate and his familiarity with the iPad as a means of assistive technology pre and post intervention?

Definition of Terms

Transition-aged students. Transitioned-aged students are defined as those students age 14 or older who have begun to address post-secondary goals and objectives in an Individual Transition Plan (ITP).

Assistive Technology. As defined by the Disabilities Education Improvement Act of 2004, assistive technology is "any item, piece of equipment or product system...that is used to increase, maintain, or improve functional capabilities of a child with a disability" (Bausch &Ault, 2008, p. 6).

Digital Immigrant. Those who were not born into a *digital world* but have at some point become interested in technology and adopting aspects of technology in their own

lives (Prensky, 2001). Digital immigrants learn how to adapt to their environment while still managing to keep their foot in the past (Prensky, 2001). Digital immigrant teachers make the assumption that learners are the same as they have always been instead of recognizing that they are in fact different (Prensky).

Self-determination. Special Education legislation emphasizes that student preferences and interests are essential in fostering self-determination in students with disabilties (Janiga & Costenbader, 2002).

Limitations

1. The number of students included in the sample size was small, only one student, therefore, generalizing the implementation of an iPad to facilitate conversational exchanges in transition-age students with developmental disabilities is problematic.
2. The participant included in the sample size was selected using purposeful sampling. Because a control group was not included in the design the results may be difficult to generalize to different populations.

Summary

Williams et al. (2008) suggest that continued research, education, and advocacy is necessary to ensure that all individuals with disabilities, in need of assistive technology, have access to appropriate technology and support. The need for technology skills is imperative in today's technological world for individuals to be able to participate in the work force (Edyburn et al., 2005, p. 724)

Studying the effectiveness of the iPad and its relevance to promoting self-determination and independence in transition-aged students is warranted.

CHAPTER 2

REVIEW OF LITERATURE

Transition of High School Students with Special Needs

Transition from high school into adulthood is a critical time for students with disabilities. These young adults face substantial difficulties in securing jobs, accessing post secondary education developing independent living skills, and even participating in their own community based activities (Johnson et al., 2002). Best practice and current legislation require that post-secondary goals and objectives for all students with disabilities must begin to be addressed by age 14 (Janiga & Costenbader, 2002). The Individuals with Disabilities Education Improvement Act Amendment (2004) includes new language regarding the role of assessment in transition planning, further requiring that appropriate post-secondary goals reflect upon transition assessment and must be included in the IEP. IEP teams must collaborate to ensure that high expectations are maintained and, furthermore, that students are given opportunities to develop skills through a wide array of curriculum, including, but not limited to: vocational education, service learning, community workability, and living skills (Johnson et al., 2002). It is the school's responsibility to support students in developing self-advocacy, decision-making, and interpersonal skills ultimately fostering self-determination (Johnson et al., 2002). As Carter et al. (2009) noted, some large disparities have been discovered between the aspirations addressed by students or their parents and the substance of students'

individual transition plans (Grigal, Test, Beatrice, & Wood, 1997; Powers et al., 2005; Trainor, 2005b; Williams & O'Leary, 2001). Post-secondary students and parents are equals in the IEP decision-making process (DeFur, 2003). Transition is a team decision and given current research in planning and assistive technology, there are a number of studies geared towards transition planning, but not a large amount of plausible research in the overall process and effective use of assistive technology.

Ultimately, the objective of this literature review is to examine the current data, transition practices, and concerns as they relate to high school-aged students with moderate to severe disabilities and their use of assistive technology. This review focuses on the IEP team effort to appropriately assess and survey students eligible to transition in the areas of academics, speech and language, life skills, and assistive technology along with meeting the requirements of current legislation. This review also highlights assistive technology as it relates to transition-aged students and introduces new modalities in which they may benefit from.

Legislation Requirements for Transition

Special education programs have been influenced by many recent federal and state education reforms in order to promote comprehensive strategies to improve public school programs (Johnson et al., 2002). The Individuals with Disabilities Act (IDEA) of 1990, and its amendments (1997 & 2004) provide funding mandates for identifying people for special education and the terms of services for individuals through the age 21 (Janiga & Costenbader, 2002). It is not only instructional best practice, but the requirement of current legislation that post-secondary goals be addressed for all students

beginning at age 14 (Janiga & Costenbader, 2002). Another amendment to IDEA (2004) clearly articulates the role of assessment suggesting that Individualized education programs (IEPs) for those at the age of transition must reflect "appropriate post-secondary goals based upon age-appropriate transition assessment, related to training, education, employment and where appropriate, independent living skills " (Carter, Trainor, Sun, & Owens, 2009, p. 75). According to Johnson et al., the greatest areas of non-compliance come from failure to provide adequate notice of meetings, not having the appropriate participants in attendance, and predetermining services. Thus, it is imperative that teachers are well educated and prepared to meet the transitional needs of students with disabilities and be in compliance with legislation. It is also important to note that ineffective teaming strategies and lack of parent process negatively impact IEP responsiveness.

Transition Assessment

According to Carter et al. (2002), literature on transition assessment consists of discussion papers that articulate policy and practice recommendations. Carter et al. (2002) emphasizes that current research lacks data-based findings to further inform teachers of potential issues to be encountered during assessment. Johnson et al. (2002), insinuates that there is a critical need to develop not only transition assessments, but curriculum and means of instruction that are meaningful and relevant to all students. Transition assessment should be comprehensive, meaning that they address a broad range of domains that are relevant to post-secondary life and independent living skills (Carter et al., 2002). Secondly, transition plans should ultimately be strengths-based, building upon

the student's existing strengths and skills in order to give them optimal opportunity to succeed (Carter et al., 2002). Carter et al. (2002) also recommend that transition incorporate multiple perspectives of individuals who are familiar with the students across contexts. Highlighted in deFur (2003) parents and students are equal participants in all IEP decision making. That being said, parent contributions to transition assessment and planning are valued. deFur suggests that in order to ensure the IEP reflects individual needs, interests and preferences, student input should be obtained whether or not the student will be attending his or her IEP. The youth with disabilities should be equally involved in the process by providing information about their own strengths and even needs across all domain areas (Carter et al., 2002). In a study of 160 students with emotional and behavioral disorders, Carter et al. (2002), sought to examine the extent of which members of an IEP team (students, parents, and teachers) were either similar, and/or different in their assessments of student' transition strength in specific domains. The study found that for each individual, teachers, students, and parents differed in their assessments of student transition-related strengths and needs. Therefore, the variability in evaluation of skills further supports recommendation decisions.

Involvement in the Transition Process

As noted in Carter et al. (2002) incorporating multiple perspectives in the assessment process supports the extent to which respondents had ample information to report on. It is noteworthy that educators have limited opportunities to observe their students in non-academic domains, which could "inadvertently result in students' strengths and needs in relevant domains being overlooked unless additional input from

others is being sought" (Carter et al., p. 89). Previous research suggests that students with disabilities have a tendency to evaluate themselves more favorably than adults do in certain domains (Carter et al., 2002).

Data from adolescent interviews revealed that they were unaware of having been involved in their transition planning. In their survey, Janiga and Costenbader (2002) also found little satisfaction among post-secondary school professionals and the services provided to students with learning disabilities. Similarly, parents of students reported that when they received information and support from the schools about transition, it was too late (Hetherington et al., 2010).

deFur (2003) suggests that a focus of secondary transition should be centered on creative opportunities to families and various services. Parents should not only be well informed, but empowered as productive members of their child's educational team. Interactive teaming models, where all members of the IEP team are valued equally and in which parents are regularly involved in education decisions and programming (Correa, Jones, Thomas, Morsink, 2005). Correa et al. describe the methodology, implementation strategies and the utility of interactive teaming models to propose improved IEP team building models, some of which include increased parental empowerment and participation.

Given that parent and student input is a critical component of transition planning, but seemingly lacking, it is essential that all involved in the process understand the skills necessary for a student to be employable so that regardless of school preparation, one's family can work on skill sets in these domains.

Goals Derived from Transition Assessment and Team Input

deFur (2003) notes that IEP and transition plans begin their journey on separate tracks, but the process that was previously separate becomes a "critical junction" in linking a goal to form one single transition plan. deFur articulates that each and every education decision that is made regarding a student with a disability has the potential to affect how that student experiences his or her life after the completion of school. Also noted is that strategic planning begins with a vision of the future and must be based of personal values and not dismiss any possibility (deFur, 2003). Transition goals are based on the needs of the individual student. Student preferences and interests are taken into account, including, but not limited to community experiences, instruction, adult living objectives, and developing employment skills (Janiga & Costenbader, 2002).

Special Education legislation emphasizes that student preferences and interests should be considered, therefore making self-determination skills essential for those with disabilities. (Janiga & Costenbader, 2002). Large scale surveys completed by high school teachers were indicative that among the component skills most commonly associated with self-determination, special educators rated self-awareness as one of the least important priorities in instruction, and amid the least often taught self-determination skills in both general and special education settings (Carter, Lane, Pierson, Stang, 2008, p. 55). On the contrary, deFur (2003) reveals that early exposure of, and training in skills related to self-determination prior to transition planning give students the tools to be an active member of the IEP team. Comparatively, Johnson et al. (2002) states that the importance of student participation has been reinforced by up and coming practices in

schools to emphasize the core values of self-determination, individual choice and shared responsibility (Johnson et al., 2002).

Given that many students with developmental disabilities are leaving high school after four years to attend post-secondary transition programs, assistive technology should be carefully considered for use and practicality be reconsidered as they are not the most conducive to use outside of the classroom. Best practices dictate that any student needing assistive technology should be evaluated and provided with that technology indicated through assessment and ability.

What is Assistive Technology?

Defined by the Disabilities Education Improvement Act of 2004, assistive technology is "any item, piece of equipment or product system ...that is used to increase, maintain, or improve functional capabilities of a child with a disability" (Bausch & Ault, 2008, p. 6). The Individuals with Disabilities Act (IDEA) requires schools to provide assistive technology as part of a "free and appropriate" public education. Mandated by the reauthorization of IDEA (1997) assessment determines needs, and needs drive the Individual Education Program (IEP) in which assistive technology must be reflected if the child needs it.

Assistive technology provides access to general education curriculum in the area of academics and social skills (Dyal et al., 2009). As noted by Messinger-Willman and Marino (2010), assistive technology helps secondary students compensate for their academic underachievement as a result of having a disability. As Cronis and Ellis (2000) noted, assistive technology can be used to "bridge the gap" between expectations for

students in special education and the general public. Assistive technology permits students to more effectively and efficiently complete tasks that otherwise would be a challenge, while enabling them to become more active class participants (Bailey et al., 2005).

Nochasjski, Oddo, and Beaver (1999) reiterate that students with developmental disabilities need access to technology in order to even benefit from it. Technology serves as a symbol of a school's ability to prepare an educated and qualified work force (Edyburn, et al., 2005).

Matching a Person to Assistive Technology

There are light tech and high tech devices in the realm of assistive technology. A light tech device is simple, usually non-electric, and fairly inexpensive. (Dyal et al., 2009). High tech devices are more complex and typically more expensive than a light tech device (Dyal et al., 2009).

Duhaney and Duhaney (2000) recommended that education specialists should consider the how well a particular device can be integrated into a particular students educational day and instructional environment. The timeline of a device's necessary upgrades and also the maintenance of a device should be taken into consideration as well (Duhnaney & Duhaney, 2000). Lastly, "transition planning for students using assistive technology empowers the student to participate at a level appropriate to age and ability" (Edyburn et. al., 2005, p.188).

Transition and Technology

The connection that technology has to a student's future is critical. A qualitative study in 2001 sampled 34 individuals experiencing transition. The students reported that they felt unprepared and inapt for the adult world they would soon be entering (Stewart et al., 2001 Edyburn et al., 2005). Also mentioned was that services, particularly assistive technology devices were seldom transitioned. If the assistive technology devices were transitioned, the process was by no means smooth (Edyburn et al.).

Recent studies have revealed that society is making a shift from skills-based to service based in future workplaces (Hauser & Malouf, 1996). The need for technology skills is imperative in today's technological world for individuals to be able to participate in the work force (Edyburn et al., p. 724) Higher order thinking skills and more interpersonal skills will be required of all workers (Hauser & Malouf, 1996). Because of these changes, a person with a disability has less chance of being employed (Hauser & Malouf, 1996). As revealed by Nochasjski et al., it is likely that students with disabilities will leave high school without the education, training, and or services necessary to promote not only employment, but post secondary education and independent living (1999). As a result, of their Technology and Transition Project, Nochasjski et al. outlined a model to coordinate and provide assistive technology to students. Their model specifically highlights support needed from occupational therapy in secondary settings and transition as well as facilitating a successful transition for those with disabilities (Nochasjski, Oddo, & Beaver, 1999). One of the four components involves working with schools to facilitate coordination and collaboration amongst all member of the IEP team

including service providers, school personnel, the family, and the student. Given that technology is evolving rapidly and today's students are "technology natives", IEP team members must be informed of the newest and most appropriate form of assistive technology available (Prensky, 2001).

Promoting Self-Advocacy Through Assistive Technology

Current augmentative and alternative communication (AAC) technology has not only supported, but improved outcomes for individuals with disabilities within community, and school settings, in obtaining employment, and fostering relationships (Williams, Krezman, & McNaughton, 2008). AAC devices must give students the opportunity to advocate for an equal educational opportunity and effectively demonstrate intellectual ability (Williams et al.). Also critical is access to vocabulary that "supports full participation in 21st century life; in medical, legal, and financial decisions..." (Williams et al., p. 200).

Revealed by Williams et al. (2008) is that providing access to communication is "fundamental to the expression of self-determination and the exploration of options for a full and rich life" (p. 198). It is suggested that in order to support a child's growth into adulthood, he or she must be given the opportunity and skill set to develop self-determination skills (Williams et al., 2008). Augmentative communication provides a person the opportunity to have and develop strong relationships with others. Ensuring that society accepts the importance of multiple modes of communication remains and hard-fought battle, however, as stated by Jim Prentice (2000), "Deny a person the ability

to articulate intelligibly, and that person is sentenced to live in social, intellectual, and emotional isolation" (p. 213)

Direction of Assistive Technology

Today's generation are "native speakers" of the digital language including computers, the Internet, and video games (Prensky, 2001) Prensky notes that the biggest problem facing our schools today is the "digital immigrant," teachers, those who turn to the Internet as a secondary source, are still relying on out of date manuals or "dittos" first (Prensky, 2001). He reveals that digital immigrant instructors speak an outdated language, that of the pre-digital age. As a result, digital immigrant teachers are struggling to teach their students who speak an entirely different digital language. Prensky poses the question, "Should the Digital Native students learn the old ways, or should their Digital Immigrant educators learn the new?" (Prensky, p. 3). He suggests that it is highly unlikely that the digital natives will change their ways. Furthermore, Prensky highlights "future" content as it relates to digital natives. It is a less traditional curriculum, but far more interesting and engaging to today's students (Prensky, 2001). Prensky expresses the need to develop digital native teaching methodologies for all subject areas and at all levels. Given that technology is the future and that today's students are no longer the people that our education system was designed to teach, it is important for educators to find appropriate, meaningful, and engaging ways to teach their digital native students (Prensky, 2001). Additionally, Edyburn et al. (1995) expressed at the Secretary's Conference on Educational Technology "schools lag behind workplaces, leisure places, and other realms of life in their access to new information technologies" (p. 113)

Apple's iPad has been well received by those with disabilities who benefit from assistive technology. Noted by Herbet (2010), "Apple products are a fraction of the cost of other communication devices from companies such as DynaVox and Prentke Romich Co., that can cost upwards of $10,000." There are many different "Apps" that can be downloaded and used with students with disabilities. One of the most popular augmentative communication applications, and most expensive at $189.99 is Proloquo2Go, used for augmentative and alternative communication providing natural sounding text-to-speech voices (Herbet, 2010.) Bill Thompson, a school psychologist of the Orange County Department of Education, has conducted a pilot test to chart the iPad's effectiveness with students (Herbet, 2010). Five Hundred students with special needs from school districts within the Orange County department of Education population participated (Herbet, 2010). The pilot studies were conducted to determine how well the iPad aligned with the current curriculum being taught, and how cost effective the Apple product was (Herbet, 2010). The Orange County Department of Education has 10 iPads, 5 of which were monitored by Thompson in order to develop a "uniform policy for their use" (Herbet, 2010). Thompson revealed that Apple touch-screen products were more cost effective than other devices currently on the market. Nevertheless, given the iPad's ability to serve other functions like deliver web content and music, this makes the product less likely to be funded by insurance companies (Herbet, 2010).

While not much formal research on the effectiveness of Apple's iPad as a means of assistive technology has been conducted, a study of 15 toddlers at the University of

Kansas found that 3-4 year olds with cortical vision impairment benefit from the iPad (Saunders, 2011). Saunders noted that children with this disorder do not typically look at people or objects, but they were drawn to the light of the iPad, interacting with the objects on the screen (Saunders). This is an example of the effective use of an Apple iPad as an assistive technology device.

Summary

Transition from high school to adulthood marks a significant time in lives of those with disabilities and their families. This review emphasizes the importance of closely adhering to the legislation-determined guidelines. Given that post-secondary goals should begin to be addressed at age 14, it becomes the role of the educator to not only inform, but involve the student and his or her family. While legislation requires a transition plan to be implemented at age 14, many parents feel they were not informed early enough in the process. As a result, further research needs to be conducted to understand the expectations of families in the transition process.

Paralleling closely with the fact that parents often are under informed about transition, research reveals that students are also unaware of having been involved in their own transition process. Clearly, there is a gap between the communication of professionals and the families, which needs to be addressed. Professionals might be adhering to legislation, but according to the students and their families, transition is rather ambiguous. It might be beneficial for future research to investigate effective ways to inform parents earlier in the process whether it is through training, hosting an information night, or providing a transition-planning handbook, among others. Research on the

effectiveness of Person Centered Planning as a means of guiding student transition from high school to post-secondary programs could also serve beneficial to families in transition.

Another area addressed in this review is the importance of assessment to encapsulate the student as a whole from the perspective of teachers, service providers and families. Noted in the findings is the difference in assessment results across various domains by the teacher, student, and parent. This is an important piece to viewing the student holistically and requires effective teaming and using the information to create the most appropriate and individualized, strengths-based transition plan. Research reveal that the differences in results are associated with the various settings and domains the student is seen in, as parents might see different skills at home than teachers do at school. Further research in the area of effective teaming would help to bridge the gap when parties of the IEP team are completing assessments and rating scales.

Contradictory research in fostering self-determination in students with disabilities was presented. While legislation emphasizes that self-determination skills are essential for students in transition, other research rated self-awareness as the least often self-determination skill taught. Furthermore, it is revealed that self-determinations skills training, when taught prior to transition planning, allows the student to be actively involved in the IEP process. Inconsistent research results in the need for further research in this area. Due to gaps in the literature, it is recommended that researchers provide rationale to clearly identify and support their model of appropriate instruction to foster this skill.

Also discussed in this review was the assistive technology and how it is used to support transition-aged students. As students transition from high school into post-secondary placement, they spend less time in the classroom and more of their time in the community exploring independent living skills and pre-vocational skills development. Growing up in the age of technology presents great potential for those who rely on augmentative communication as a means of expression and developing relationships across life.

Suggested above is the notion that further research into technology, specifically the iPad to facilitate student self-determination is needed for successful transition planning. Given that there are many transition-aged students utilizing assistive technology in schools, it is rather compelling to explore how self-determination can be developed and encouraged through new means of assistive technology that includes the use of the iPad research, studying the effectiveness of the iPad and its relevance to promoting self-determination and independence in transition-aged students is warranted. Williams et al. (2008) suggest that continued research, education, and advocacy is necessary to ensure that all individuals with disabilities, in need of assistive technology, have access to appropriate technology and support.

CHAPTER 3

METHOD

Overview

As discussed, more and more students are attending adult transition programs and leaving the structure of a self-contained classroom. Given the direction that technology is heading, new modalities of assistive technology and augmentative communication would benefit all students with disabilities in fostering self-determination skills. Further research into technology, specifically the use of the iPad to facilitate student self-determination is needed for successful transition planning, acquiring vocational and independent living skills.

Research Questions

The following research questions were investigated:

Student Outcome

1. How does the implementation of an iPad facilitate conversational exchanges in a transition-aged student with developmental disabilities?

2. How does the iPad promote self-determination skills in a transition-aged student with developmental disabilities?

Parent Perception

3. What are parent perceptions about their child's ability to self-advocate and his familiarity with the iPad?

Participants

Parent Participants

The parents were middle aged-parents had a two children, both of whom qualify for special education and attend a special education program in Southern California. The parents have been part of the IEP process since the beginning of their children's diagnoses and remain actively involved. The survey was sent home to the family in a manila envelope, completed and returned.

Student Participant

Due to the nature of this study, a case study, one student was chosen for the intervention. Student participation was contingent on parents' voluntary consent (Appendix A) as well as student assent (See Appendix B). The student chosen for the intervention was a 16-year old male named David, who attended a high school in Southern, California. David was chosen for the study over his brother because he was non-verbal and met the criteria of being at the age of transition. According to the student's IEP, he qualified for special education primarily under the category of orthopedic impairment and second under intellectual disability.

Teacher Participant

One special educator who taught in a moderate/severe high school setting was the primary investigator of this research. Paraprofessionals collected inter-observer reliability

data and completed procedural fidelity checklists to assess the instruction of the researcher.

Intervention Setting

Intervention occurred within the context of educator and parental collaboration as well as teacher observations of a participant. Interventions were implemented through direct instruction of the developmentally delayed special day class served as part of the school district's self-contained, specialized academic instruction program in Southern California.

Utilizing a survey-based data collection method, intervention aimed at increasing self-determination skills in a transition-aged student. Specifically, intervention was used to (a) improve the student's ability to use assistive technology (i.e., Apple iPad) and to (b) improve the student's ability to communicate his wants and needs using an augmentative communication device.

Design

A single-subject research design was used in the research (i.e., ABAB). A single subject research design was chosen because the effect of the experimental treatment involved only person. Repeated measurement of David's progress on the iPad took place prior to baseline, and during the treatment. Baseline data were collected prior to each self-determination lesson. When mastery of a self-determination lesson was achieved, baseline data were conducted and a second lesson was introduced.

Data Collection

The instrument used in this study was a pre and post survey (see Appendix C) that rated a student's use of technology and his ability to self-advocate in community settings.

The results of the survey were used to create instructional lessons that were implemented using an Apple iPad. The student was taught for 15 minutes daily over the course of six weeks.

The proposed survey contained the following questions to measure self-advocacy and familiarity with the iPad: "Does your son have access to a computer at home?", "Does your son or daughter have a cell phone?" and "My son or daughter orders from a menu independently." Possible student responses include "yes" or "no," and "sometimes," "always," "never."

Upon receiving the parent pre-survey, individualized self-determination lessons were planned and taught to the student. The teacher through observation and data collection monitored student progress. The dependent variables included the student's behavior and response to treatment that were measured by direct observation. Data sheets and specific concept checklists were utilized during each individual lesson. David was given verbal and gestural prompts as needed until he could independently navigate his way through, and make a request on the iPad. A correct response was awarded when David made a correct request or statement, as modeled by the investigator, with no prompts. Criterion for mastery of a lesson was independently formulating correct responses three out of three trials over the course of eight consecutive trial days.

Procedural Fidelity of the Treatment

The teacher was observed by a colleague during instruction to evaluate compliance in the study. A procedural fidelity checklist was the tool used. (See Appendix E) Compliance with the methods was noted by a "+" or "- ".

Inter-observer Reliability

Inter-observer reliability data (see Appendix F) were collected throughout the entire intervention. The investigator was the primary person in charge of data collection; however, an instructional assistant served as a secondary observer. Inter-observer reliability data checks were collected throughout 20% percent of random sessions across the course of the intervention.

Procedures

Over the course of six weeks, the following were included in the study: (a) pre-study assessments, (b) baseline data, (c) treatment, (d) inter-observer reliability, (e) and procedural fidelity.

The researcher obtained parent consent (see Appendix A) and student assent (see Appendix B) from participants prior to starting the intervention. Upon receiving the pre-survey results, an individualized intervention was planned to instruct the student on using the iPad as a means of communication. Baseline criterion performance was set a minimum of 3 days. The data were scored using a rubric. The initial lesson (see Appendix D) was teaching the student how to turn on the device and appropriately open the communication application, Proloquo2go. Subsequent lessons focused on using the

iPad to generate conversational exchanges relevant to everyday life in school, community, and workplace settings. Specifically, the student worked on the self-determination skills of choice making. The first 3 to 5 minutes of each 15-minute session were spent reviewing the previous day's concept and then building on, or learning a new concept. The investigator appropriately modeled the desired self-determination skill (i.e., making a request, choosing a meal) and then assisted the student in completing the investigator-modeled task. Verbal and gestural prompts were used during instruction until David was able to make his requests independently. Scaffolding was utilized to teach more challenging concepts including navigating through multiple folders to create a desired idiom.

Correct responses and/or conversational exchanges in three out of three trials each intervention day were considered mastery of the taught concept. Mastery of the intervention was considered three out three trials over eight consecutive sessions. When mastery of a self-determination skill was achieved, baseline data were collected for another three days prior to teaching a new self-determination skill.

Data Analysis

The research questions were analyzed using a pre and post survey completed by David's parents. In accordance with the three research questions: (a) how does the implementation of an iPad facilitate conversational exchanges in transition-age students with developmental disabilities, (b) how does the iPad promote self-determination skills in transition-age students with developmental disabilities, and (c) what are parent perceptions about their child's ability to self-advocate and his familiarity with the iPad.

The purpose of treatment was to establish whether a student's ability to effectively communicate with the use of an iPad increased following intervention.

Data from the intervention (i.e., iPad lesson) were used to determine student progress in facilitating conversational exchanges and to promote self-determination across community, home and school settings. The parent pre/post survey was used to measure the student's ability to self- advocate and to increase his familiarity with the iPad. Student achievement was quantified in the results portion, chapter four.

CHAPTER 4

RESULTS

The purpose of this study was to (a) improve the student's ability to use assistive technology, particularly Apple's iPad , and (b) improve the student's ability to communicate his wants and needs using an augmentative communication device. Two baselines and two intervention conditions were implemented using a single subject research design.

Demographic Data

One 16-year old male who qualified for special education services with an orthopedic impairment and intellectual disability participated in the study. This population was selected for the study because students with developmental disabilities need access to technology in order to benefit from it (Nochasjski et al., 1999). There is limited research that incorporates the iPad as a means of assistive technology.

Inter-Observer Reliability

The investigator and a colleague practiced inter-observer reliability until there were at least 100% agreement on three successive trials. Thereafter, inter-observer reliability (see Appendix F) data were computed on 20% of random sessions over the course of the six-week trial period.

The inter-observer agreement data were calculated by comparing results of the investigator and the inter-observer. The inter-observer agreement data were 98%.

Procedural Fidelity of the Treatment

The teacher was observed by a colleague during instruction to evaluate compliance in the study. Compliance with the methods was noted by a "+" or "-". As indicated by the procedural fidelity checklist, the teacher was in compliance on all items of the checklist (see Appendix E) as measured 20% (5.4) of the sessions over a six-week trial period. See Table 1.

Table 1
Procedural Fidelity Results as measured 6 of the 27 treatment sessions.

Procedural Fidelity Checklist	+	-
Teacher models appropriate use of the iPad	100.00%	
Teacher provides verbal and/or gestural prompting as needed	100.00%	
The teacher will provide opportunities for student to practice tasks independently.	100.00%	
The teacher reviews and assesses student progress on the lesson	100.00%	

Technology Survey

A technology survey was used pre- and post-treatment to measure the students' knowledge of technology specifically Apple's iPad as a means of effectively communicating wants and needs as well as self-advocacy. Parents of the student completed the survey. The survey asked multiple questions relevant to the student's use and familiarity with technology particularly Apple products. The survey (see Appendix

C) asked questions related to self-determination using a rating scale of "sometimes, always, never, and unable."

Pre-Survey

Parent's responses reported that the student was unable to "state his own name, " " say hello and goodbye to others," " read menus," and "ask for help from authority figures when difficult problems come up." When asked 13 questions about self-determination skills the parent responded that the student is *unable* to do twelve of the thirteen skills (See Table 2). A response of *never* was noted for the skill of "shakes head yes or no in response to a simple question (i.e., Are you hungry?)". According to the parent, the student does not have access to a computer at home, nor did he have a cell phone. The parent reported that the student had used picture communication symbols.

Table 2

Parent Pre-Survey

Parent Pre-Survey Self-Determination	Always	Sometimes	Never	Unable
1. States his own name				X
2. States home address including the zip code				X
3. Asks for help from authority figures when difficult problems come up				X
4. Says "please" when asking for something				X
5. Says "hello" and "goodbye" to others				X
6. Shakes head yes or no in response to a simple question, for example, "Are you hungry"			X	
7. Starts conversations on topics of interest to others				X
8. Ends conversations appropriately				X
9. Says the name of other people, for example parents' or friends' names				X
10. Identifies employees in restaurants and/or stores				X
11. Reads and obeys common signs, for example "do not enter," "exit," "stop," etc.				X
12. Reads menus				X
13. Orders from a menu independently				X

The parent revealed self-determination skills were most important to her since she wanted her son to be able to effectively communicate his wants.

Summary of Findings

Pre-Study

A single-subject research design was applied to one student. All data were scored using a rubric. Baseline criterion was collected for three days prior to beginning the intervention and at the mastery of each treatment. Baseline data indicated that the student was able to independently turn on the device by pressing the home key and then unlock the device by sliding the touch screen button. Once applications were present, the student clicked on the PBS Kids application and navigated his way by clicking on preferred PBS show icons. The second day of baseline data collection, the student clicked on the "Safari" Internet browser icon. Given that the iPad was not wirelessly connected to the Internet, he was not able to access youtube.com as he desired. On the third day of baseline data, the student was guided to the Proloquotogo icon. Once he clicked on the Proloquotogo icon he began to randomly press folders and icons in which he was given communication output. The third day of baseline data indicated that the intervention could begin with familiarizing himself with Proloquotogo rather than the iPad itself.

Baseline data were collected for three days prior to the start of the first lesson (see Figure 1). The student was able to navigate his way through the iPad, however he did not show any interest in the using Proloquo2go application averaging 0% (range 0%) over the course of three days.

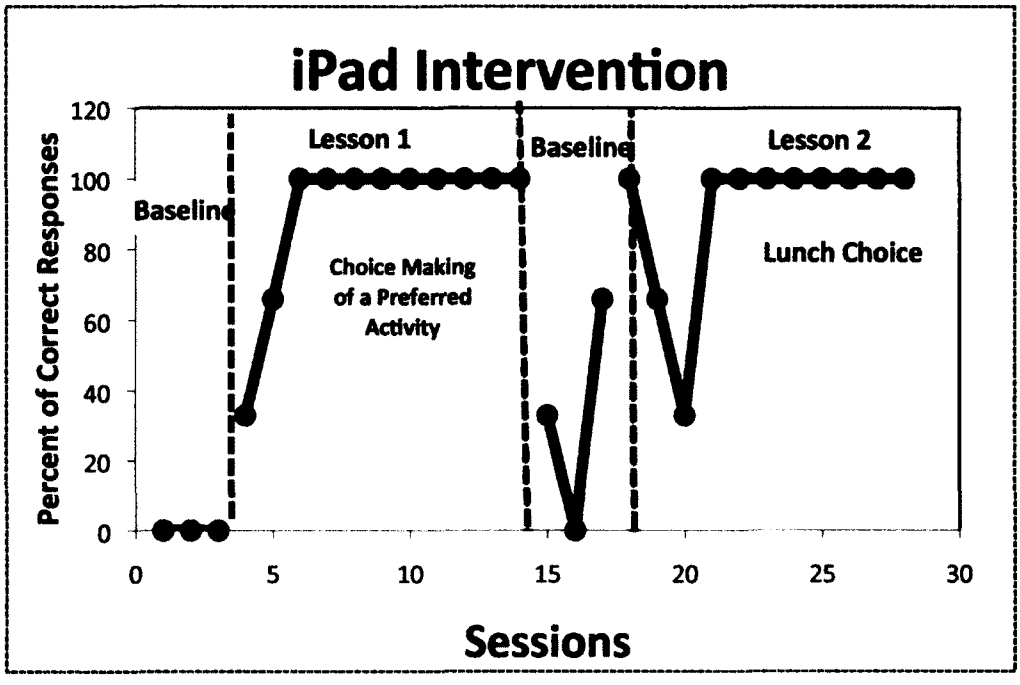


Figure 1. Line Graph of Treatment Results.

Treatment

Day four marked the start of instruction for the first self-determination lesson. Correct responses and/or conversational exchanges in three out of three trials each intervention day were considered mastery of the taught concept. Mastery of the intervention was considered 3 out 3 trials over 8 consecutive sessions.

The student was required to complete a non-preferred activity followed by a request for a preferred activity (see Appendix G). On day one of the treatment, over the course the student averaged 33.33% (range 0%-100%) in making requests for a preferred activity. On day two of treatment, the student averaged 66.66% (range 0%-100%) in making requests for a preferred activity. On day three of treatment, the student averaged 100% (range 0%-100%) accuracy over three trials in making requests for a preferred

activity. For the next seven days the student continued to meet 100% accuracy in making requests for a preferred activity. The criterion for mastery of a lesson was a consecutive eight days at 100% accuracy in three out of three trials.

During the second phase, baseline data were collected before starting the next lesson topic, making a lunch choice (see Appendix G). The student's baseline data averaged 33% over the course of three days (i.e., 33.33%, 0%, 66.66%).

Instruction for the second self-determination lesson did not show growth as consistently as the first lesson. During the first lesson, (i.e., day 18), the student showed mastery in three out of three trials making for 100% accuracy on requesting a lunch choice. The student averaged 66.66% (range 0%-100%) in making a lunch choice after the second session. Day three of the lunch choice lesson, the student averaged 33.33% (range 0%-100) in making a lunch choice. On the fourth day, the student averaged 100% in making a lunch choice using Proloquo2go on the iPad. The student continued to achieve 100% in three out of three trials over the course of seven days. The data suggest the student met the criterion for both self-determination skills taught.

Post-Survey

After giving the parent an opportunity to observe her son while making requests on the iPad's Proloquo2go software (See Appendix G), the survey was completed again, post treatment. The responses to the self-determination rating scale changed tremendously. Tasks that the student were unable to do (i.e., State his name, order from a menu independently, ask for help from authority, say hello/goodbye), now suggest that he

showed emerging skills as reflected by the parents' responses of "sometimes" on the rating scale (see Table 3).

Table 3
Parent Post-Survey

Parent Post-Survey Self-Determination	Always	Sometimes	Never	Unable
1. States his own name		X		
2. States home address including the zip code				X
3. Asks for help from authority figures when difficult problems come up		X		
4. Says "please" when asking for something		X		
5. Says "hello" and "goodbye" to others		X		
6. Shakes head yes or no in response to a simple question, for example, "Are you hungry"			X	
7. Starts conversations on topics of interest to others				X
8. Ends conversations appropriately				X
9. Says the name of other people, for example parents' or friends' names				X
10. Identifies employees in restaurants and/or stores				X
11. Reads and obeys common signs, for example "do not enter," "exit," "stop," etc.				X
12. Reads menus				X
13. Orders from a menu independently		X		

CHAPTER 5

DISCUSSION

Transition from high school into adulthood is a critical time for students with disabilities. These young adults face substantial difficulties in securing jobs, accessing post secondary education developing independent living skills, and even participating in their own community based activities (Johnson et al., 2002). It is the school's responsibility to support students in developing self-advocacy, decision-making, and interpersonal skills ultimately fostering self-determination (Johnson et al., 2002). Given that many students with developmental disabilities are leaving high school after four years to attend post-secondary transition programs, it is necessary that assistive technology be carefully considered for use and practicality in settings other than the classroom.

The purpose of this study was to explore how self-determination could be developed and encouraged in a transition-aged student through new means of assistive technology. Moreover, a primary focus of the study was investigating the effectiveness of the iPad and its relevance to promoting self-determination skills in transition-aged students.

Research question one addressed the effectiveness of utilizing an iPad to facilitate conversational exchanges in a transition-age student with developmental disabilities. The

data suggested that the student increased his ability to participate in conversational exchanges with peers and educators.

Question two addressed utilizing the iPad to promote self-determination skills in a transition-age student with developmental disabilities. Data revealed that the student increased his ability to advocate for himself using the iPad. Post intervention, the student was able to request a break, choosing from a variety of preferred activities. The student was also able to use a choice board with a variety of items found in the cafeteria to provide the teacher with his lunch choice.

General Conclusions

Conclusions were developed from an analysis of the data collected during the iPad instruction. iPad instruction was effective in promoting self-determination skills in transition-age students with developmental disabilities. The student was able to utilize the iPad to facilitate conversational exchanges. Teacher perception suggested that the intervention student increased self-determination and conversational exchanges as measured by the outcome of the intervention. Parent perception suggested that the intervention student increased self-determination and conversational exchanges as measured by the post-survey.

Summary

Researchers acknowledge that providing access to communication is "fundamental to the expression of self-determination and the exploration of options for a full and rich life" (Williams et al., 2008, p. 198). This study suggests that students with intellectual disabilities, when given access to communication in the form of assistive

technology to facilitate conversational exchanges and promote self-determination will excel.

The study was conducted to measure the effectiveness of using an iPad to facilitate conversational exchange and promote self-determination skills for those with developmental disabilities. The data suggested that the student benefited from the iPad intervention. Given that mastery of each taught concept was a correct response in three out of three trials as measured over eight consecutive sessions, of conversational exchanges and self-determination skills.

Transition-age students with disabilities who are exposed to new forms of assistive technology, specifically Apple's iPad with the Proloquo2go application can learn to facilitate conversations amongst their peers and educators, as well as make choices promoting self-determination. Basic conversational skills and self- determination skills need to be taught early on so that persons with disabilities can be prepared for their post-secondary life. Teaching these functional skills in the classroom, gives students with disabilities both the opportunity to, and the confidence to generalize these skills in community-based and career-oriented settings.

Limitations

There were a number of limitations to this study. One limitation was that due to the nature of a single subject research design, only one student received treatment, therefore these results could not be generalized. A second limitation was the setting, a public school. There are multiple factors that may have been detriment to the internal validity of the study. Some of these factors include, staff and students entering/exiting the

classroom, and changes to the student's day to day schedule due to the intervention. As a result, the participant was sometimes distracted.

Suggestions for Future Directions

Researchers found that technology is the future and that today's students are no longer the people that our education system was designed to teach, it is important for educators to find appropriate, meaningful, and engaging ways to teach their digital native students (Prensky, 2001). Due to the importance of meeting the needs of these digital native students, future research is warranted to expand upon the limited research as it relates to transition-age students. Future research is needed to:

1. Assess the generalization of students' conversational exchanges and self-determination skills in a variety of settings
2. Apply the intervention to more that one student in order to more appropriately assess the iPad's effectiveness.
3. Further explore and teach additional relevant self-determination skills to transition-age students.
4. Investigate other uses of the iPad for transition-age students with disabilities (using Google to map a bus route, exploring the calendar feature as reminders (i.e., take medicine, call mom))
5. Facilitate the use of touch products (i.e., Apple iPad) as a means of self-determination in students younger than transition-age.

Conclusion

The existing research, as noted by Cronis and Ellis (2000), suggest that assistive technology can be used to "bridge the gap" between expectations for students in special education and the general public. Nochasjski et al. (1999) reiterate that students with developmental disabilities need access to technology in order to even benefit from it. Technology serves as a symbol of a school's ability to prepare an educated and qualified work force (Edyburn et al., 2005). Current augmentative and alternative communication (AAC) technology has not only supported, but improved outcomes for individuals with disabilities within community, and school settings, in obtaining employment, and fostering relationships (Williams et al., 2008). Growing up in the age of technology presents great potential for those who rely on augmentative communication as a means of expression and developing relationships across life. Prensky (2001) suggests that today's students are no longer the people that our education system was designed to teach. Educators must find appropriate, meaningful, and engaging ways to teach their *digital native* students.

The iPad intervention was successful in promoting self-determination skills in a transition-age student with a developmental disability. The use of Apple's iPad is an age appropriate tool to be used by students with disabilities to effectively communicate their wants and need as well as to self-advocate for themselves. This research suggests the importance of a teacher's designing and implementing lesson plans that incorporate the use of the iPad to facilitate student's self-determination skills,

APPENDIX A

PARENT CONSENT FOR STUDENT PARTICIPATION

iPad Instruction
Parental Consent for Student Participation

Dear Parent:

My name is Elise Flocken. I am an education specialist at Northwood High school and a master's student at California State University, Fullerton under the direction of Dr. Debra Cote. I am researching the effectiveness of iPads as a means of fostering self-determination in school, home, and community settings.

I am asking for permission to instruct and collect information on your child's reaction to instruction to better understand the effectiveness of an iPad when combined with instruction. I would also like to collect information through a survey from you, evaluating your son's use of technology and ability to self-advocate prior to and after the intervention.

There are no foreseeable risks to participating in this study, and it will not cause any stress or discomfort for your child. If your child doesn't want to participate, he/she may say no.

All research records will be kept confidential to the extent allowed by law. All records will be stored in a locked cabinet for the duration of the study.

Permission for your child's participation is completely voluntary and you are free to withdraw from participation at any time without penalty. Your child will also be told that he or she can refuse to participate in the study at any time and will continue to receive general instruction.

If you have additional questions please contact me, at 949. 936.7319 or eflocken@iusd.org or my advisor Dr. Debra Cote, Dcote@fullerton.edu. You may also contact the CSUF Institutional Review Board, (657)-278-7640, irb@fullerton.edu.

Please sign this form and return it to me if your child wishes to participate. Thank you for helping us improve instruction for students!

I have carefully read and/or I have had the terms used in this consent form and their significance explained to me. By signing below, I agree to my child participating in the proposed study.

Child's Name_____

Parent's Name: _____

Signature: _____

APPENDIX B

VERBAL ASSENT FORM

iPad Instruction
Verbal Assent (Form will be read to the students and he will fill in the second page)

Dear Student:

My name is Elise Flocken. I would like to work with you using an iPad and an application called Proloquo2go to better communicate your wants and needs.
If you agree, you will be working with me to learn some new things on the iPad. It is very important to me to protect your privacy. Your name will never be used outside of this classroom. All of my documentation will be kept private.

No one will be mad at you if you decide to not participate. Even if you start working with me, you can decide you don't want to at anytime and no one will be mad. You can ask me any questions about why I am taking notes, and/or the activities I am doing with you.

If you agree to participate, put a check mark in the "Yes" box. If you do not want to participate, put a check mark in the "No" box. Put your name at the bottom of the paper.

If you choose to participate, thank you so much for helping other teachers to learn a strategy to help their students just like you!

Sincerely,

Elise Flocken

California State University, Fullerton
Master's student.

Check one box.

_____YES.	**_____ NO.**
I want to be in the study. I understand that I don't have to any extra work to be in the study. I understand that even if I check "yes" now, I can change my mind later.	I do not want to be in the study. I understand I must still do the work in class like everyone else.

My name is

_____

Date

_____

APPENDIX C

PRE/POST PARENT SURVEY

PRE/ POST SURVEY:

This survey is intended to gather information that will enable educators to better serve the need of students. It is especially designed to assist in fostering self-determination using an iPad as a means of communication.

Your confidentially is assured. The investigator will be unable to relate responses to respondents. Please do not write your name or provide any identifying information anywhere on the questionnaire.

Thank you for you assistance in completing this research, which will benefit you, your students, and others in the future.

Demographic Information:

Which if the following best describes your son's current classroom setting?
_____Early childhood
_____Mild/Moderate
_____Moderate/Severe

Which of the following best describes the age range of your child?
_____0-3 (Early Childhood)
_____4-11 (Elementary)
_____12-14 (Middle School)
_____14-18 (High School)
_____18-22 (Post-Secondary)

Please identify your son's qualifying disability.
_____Autism
_____Orthopedic Impairment
_____Speech/Language Impairment
_____Developmental Delay
_____Other Health Impairment
_____Intellectual Disability
_____Multiple Disabilities
_____Other (please indicate): _____

Please complete the following questions.	Rating *Sometimes*	*Always*	*Never*	*Unable*
SELF-DETERMINATION:				
My son...				
States his or her own name				
States home address including the zip code				
Asks for help from authority figures when difficult problems come up				
Says "please" when asking for something				
Says "hello" and "goodbye" to others				
Shakes head yes or no in response to a simple question, for example, "Are you hungry"				
Starts conversations on topics of interest to others				
Ends conversations appropriately				
Says the name of other people, for example parents' or friends' names				
Identifies employees in restaurants and/or stores				
Reads and obeys common signs, for example "do not enter," "exit," "stop," etc.				
Reads menus				
Orders from a menu independently				

Please indicate your response by checking yes or no.	*YES*	*NO*
if yes, is it a smart phone (does the child have internet access?)?		

Technology in the Home/Community:

Does your son have access to a computer at home?		
Does your son have a cell phone?		
if yes, is it a smart phone (does the child have		

If you answered yes to the above, please answer the following questions:

If you have a computer please indicate what kind

_____PC
_____Apple

How much time does your son spend on the computer per day?
_____Less than 1 hour
_____1-2 hours
_____2-3 hours
_____3-4 hours
_____more than 4 hours.

Is your computer at home connected to the internet?
_____Yes
_____No

Which of the following does your son use the computer for? Mark all that apply
_____Email
_____Games
_____Word processing
_____Internet
_____Social Media
_____Other(please indicate): _____

What is the main function of your child having a cell phone? Mark all that apply
_____Placing phone calls
_____Texting
_____Email
_____Games

Does your son use his or her cell phone to text message?
_____YES
_____NO

On the average day, my son sends and receives about _____text messages.
_____0-5
_____6-10
_____11-15
_____16-20
_____other (please indicate)_____

My son has used, or currently uses the following types of assistive technology:
Mark all that apply:

_____Go Talk!
_____Dynavox
_____Picture communication
_____iPad
_____Other(please indicate): _____

My son has used to the following Apple Products:
Mark all that apply
_____IiPhone
_____iPod
_____iPad
_____Macbook (Macbook, Macbook Pro, Macbook Air)
_____Other (please indicate):_____

My son uses/owns the following Apple Products:
Mark all that apply
_____iPhone
_____iPod
_____iPad
_____Macbook (Macbook, Macbook Pro, Macbook Air)
_____Other (please indicate):_____

As a parent with a transition-aged student, please list the self-determination skills that are most important to you:

_____
_____
_____

APPENDIX D

SAMPLE LESSON PLAN

IPAD LESSON PLAN

Revised August 2007

LESSON TITLE: BECOMING FAMILIAR WITH AN IPAD

TEACHER: Elise Flocken

EQUIPMENT/MATERIALS: iPad

INSTRUCTIONAL STRATEGIES PLANNED:

Error! Hyperlink reference not valid. **through explicit teaching then "drill and practice"**

1	**BEHAVIORAL OBJECTIVE(S) OF LESSON (*WHAT STUDENTS WILL BE ABLE TO DO*?)** The student will be able to independently turn on iPad and locate the application Proloquo2go
2	**LESSON INTRODUCTION/ANTICIPATORY SET** The teacher will be working with the student in a setting with minimal distractions. The teacher will model the appropriate handle of the iPad and how to turn the device on by pushing the "sleep/wake" button on the top.
3	**LESSON BODY/STUDENT LEARNING ACTIVITIES:** The teacher will verbally walk the student through the steps waiting until the "Apple" icon appears and the device is powered on. The teacher will power off the device. The teacher will then allow the student to try turning on the device, giving verbal and gestural prompts as needed. The teacher will discretely note the number and type of prompt used for the student to complete the task. If the student is unable to complete the task with prompting, the teacher will use hand-over-hand techniques to help the student turn the device on. Once the student powers the device on, the teacher will tap the Proloquo2go application. The teacher will then exit out of the application back to the main page. The teacher will guide the student's finger to the Proloquo2go application, allowing the student to tap it and open the application.
4	**LESSON CLOSURE:** The teacher will review the steps that were taught to the student and allow the student to practice turning on the iPad and opening the Proloquo2go application once more. The teacher will document the student's progress on day 1 of the intervention.

APPENDIX E

PROCEDURAL FIDELITY CHECKLIST

Procedural Fidelity Checklist

Teacher:_____ Session #_____

Observer: _____Date: _____

Condition: Treatment

Observer signature: _____

	+	-
Teacher models appropriate use of the iPad		
Teacher provides verbal and/or gestural prompting as needed		
The teacher will provide opportunities for student to practice tasks independently.		
The teacher reviews and assesses student progress on the lesson		

APPENDIX F

INTER-OBSERVER RELIABILITY SCORING RUBRIC

Inter-observer Reliability Scoring Rubric

Student_____ Date_____

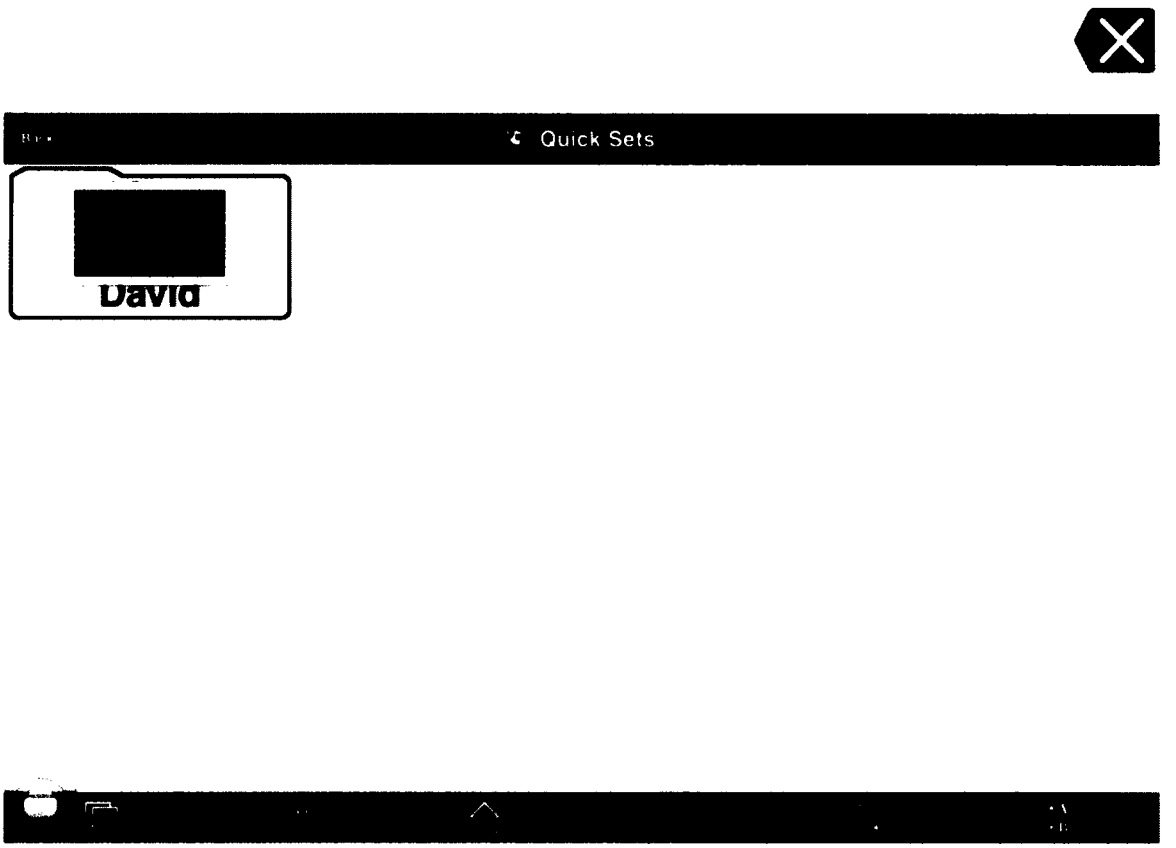
Topic of Instruction: _____

Pre-test _____ Post-test _____

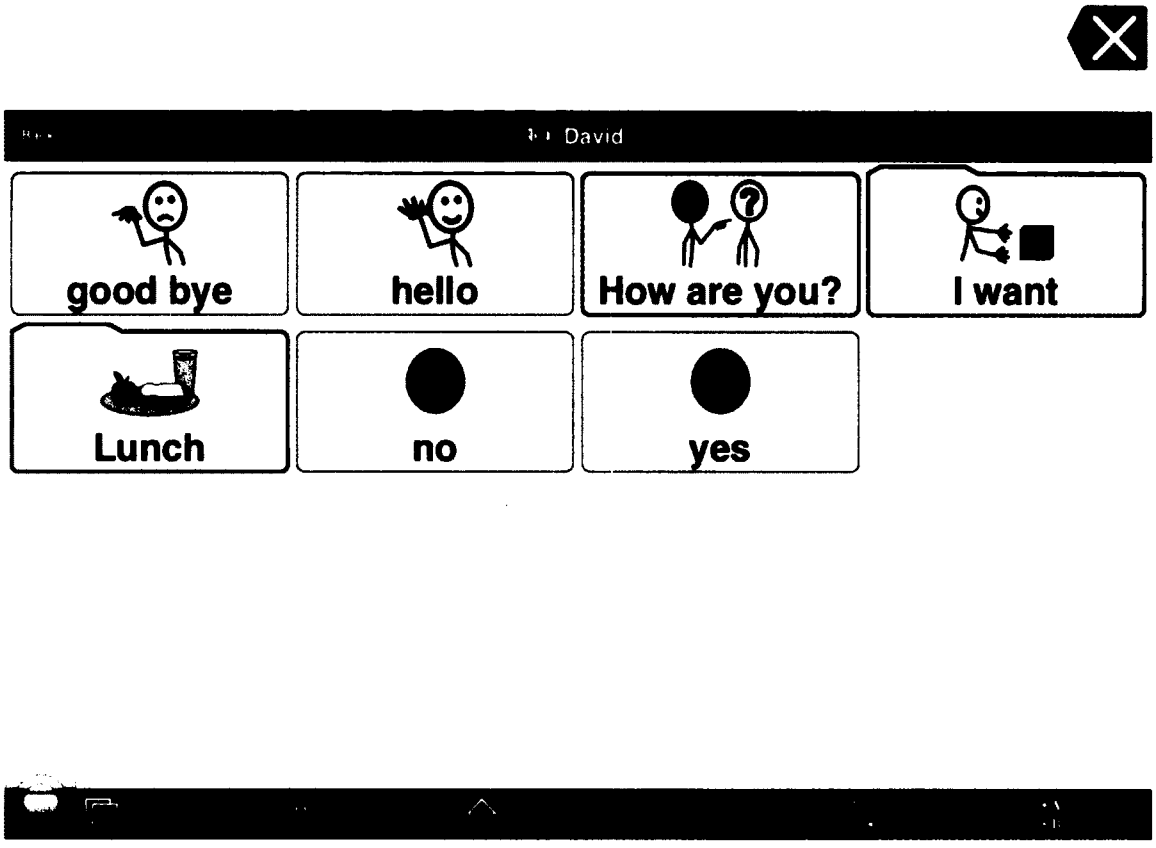
	Correct response	Incorrect response
(1) Trial 1		
(2) Trial 2		
(3) Trial 3		

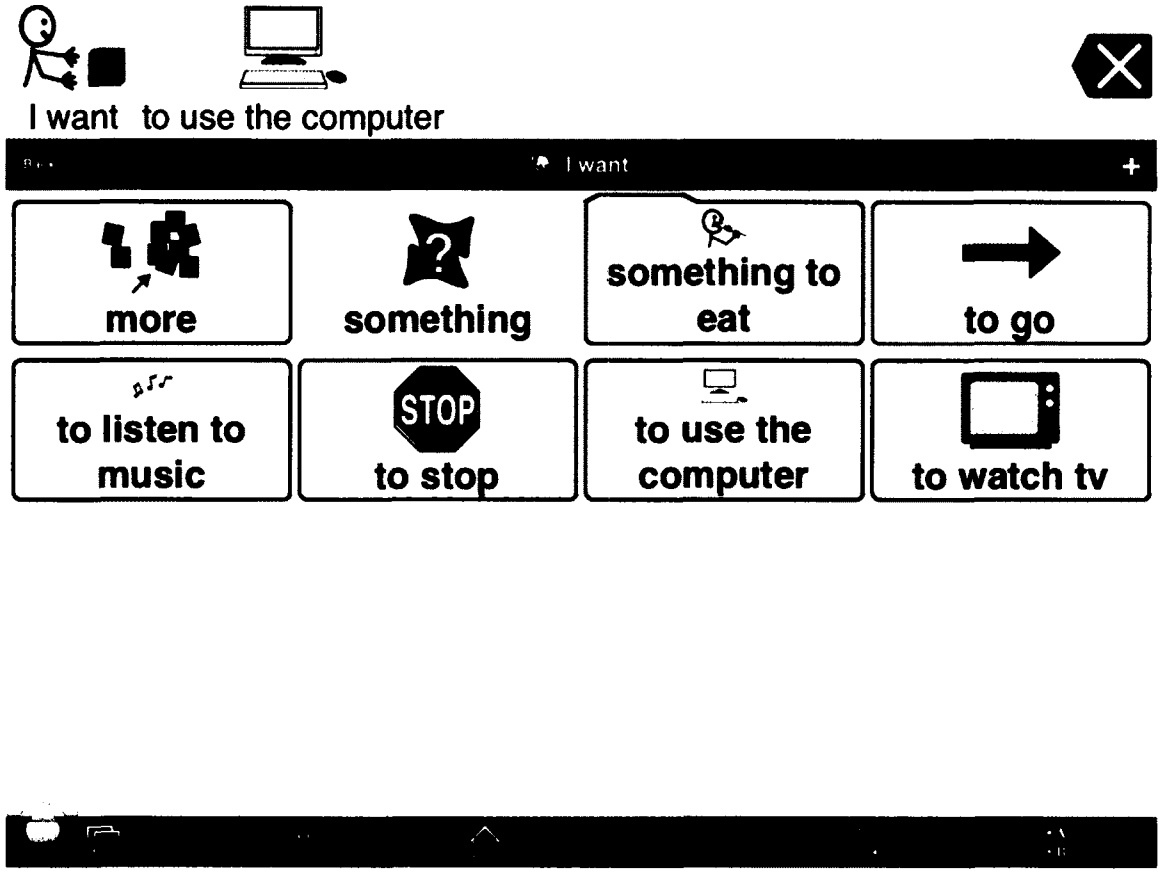
APPENDIX G

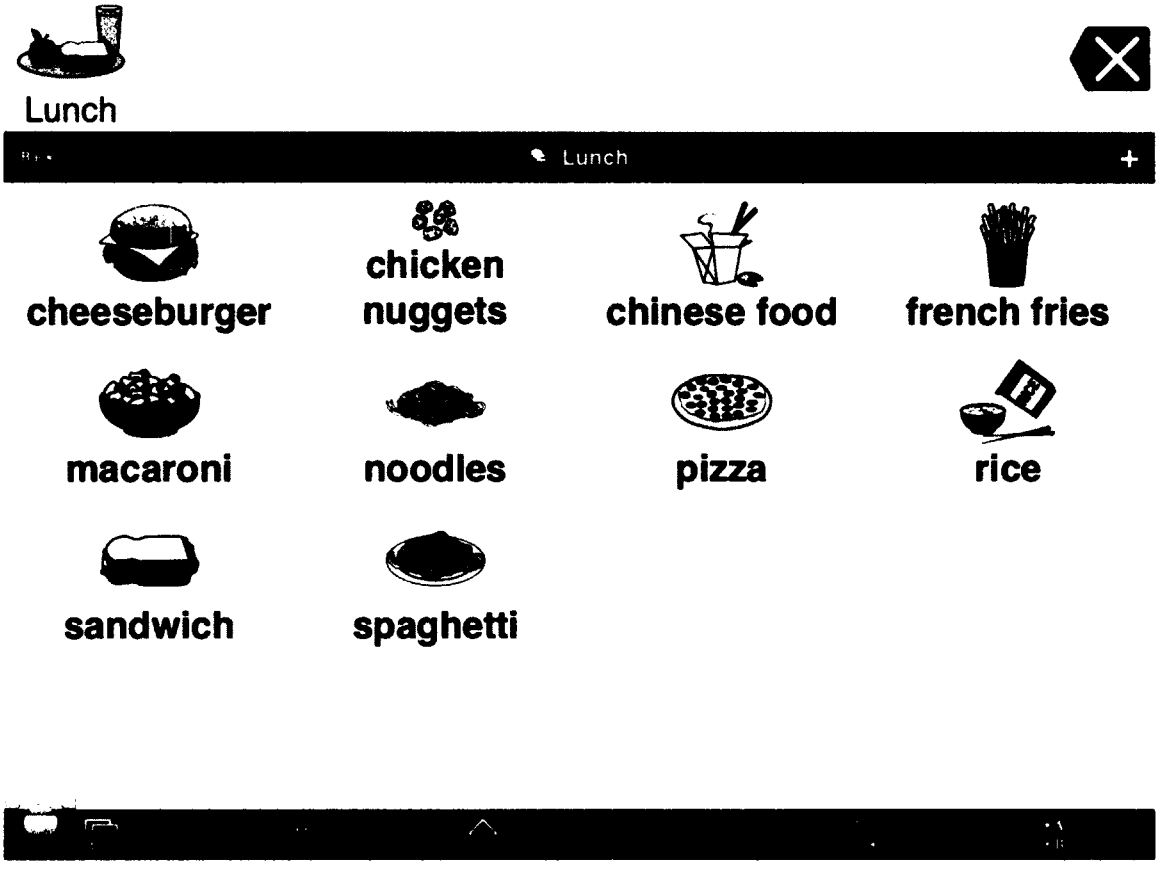
IPAD INTERVENTION SCREEN SHOT COLLECTION

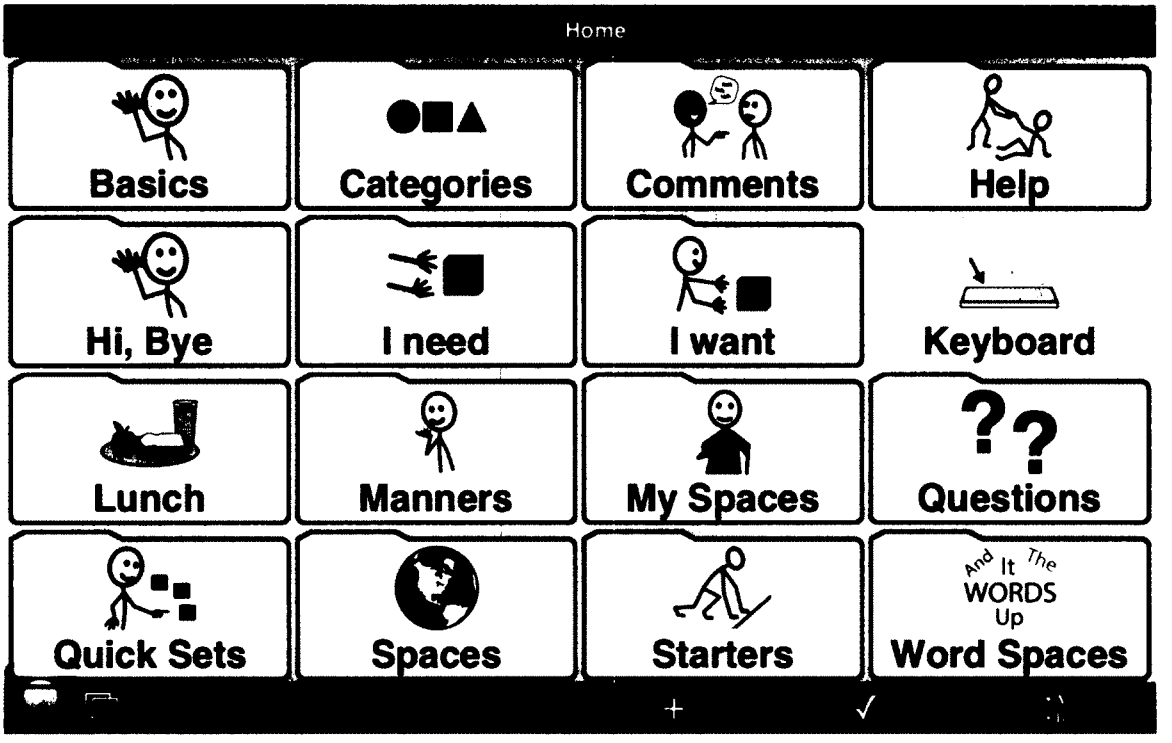


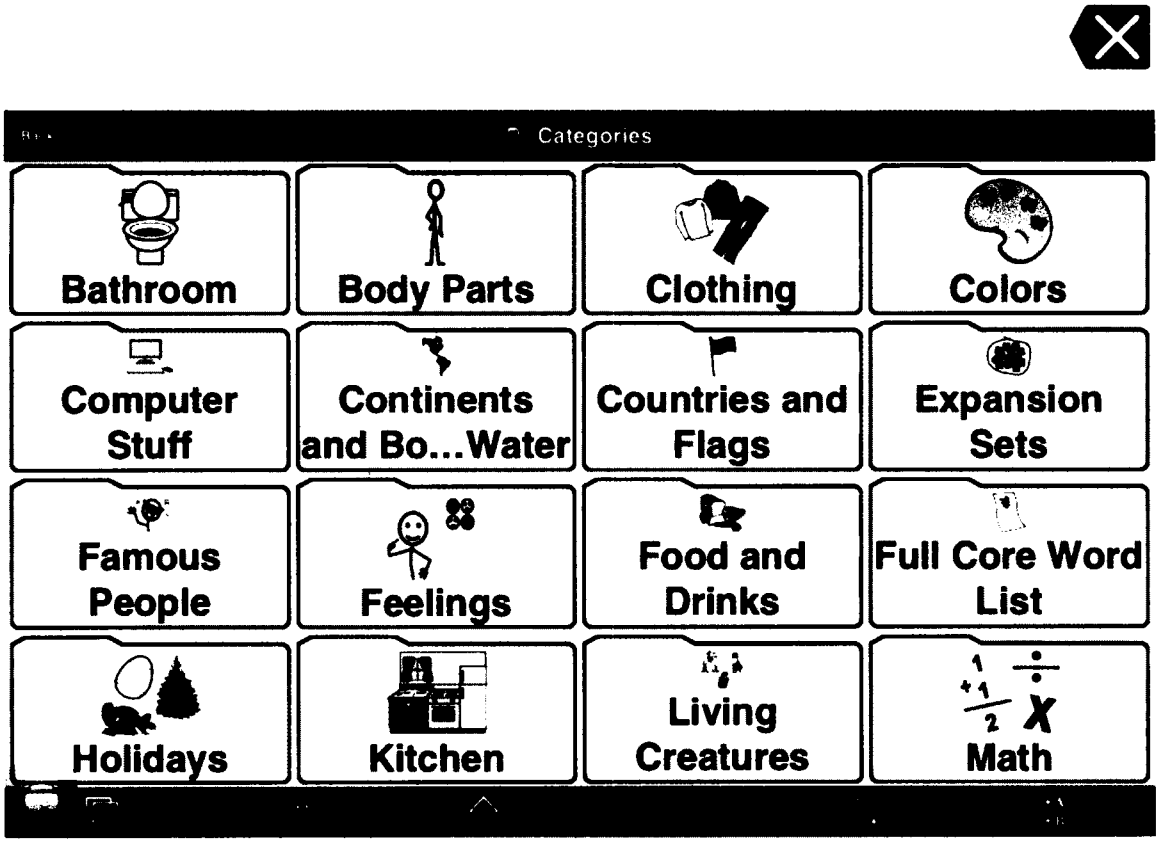
*Student's picture has been blacked out.


David
good bye
hello
How are you?
I want
Lunch
no
yes


I want to use the computer
I want
more
something
something to eat
to go
to listen to music
STOP
to stop
to use the computer
to watch tv


Lunch
Lunch
cheeseburger
chicken nuggets
chinese food
french fries
macaroni
noodles
pizza
rice
sandwich
spaghetti


Home
Basics
Categories
Comments
Help
Hi, Bye
I need
I want
Keyboard
Lunch
Manners
My Spaces
Questions
Quick Sets
Spaces
Starters
And It The WORDS Up
Word Spaces


Categories
Bathroom
Body Parts
Clothing
Colors
Computer Stuff
Continents and Bo...Water
Countries and Flags
Expansion Sets
Famous People
Feelings
Food and Drinks
Full Core Word List
Holidays
Kitchen
Living Creatures
Math

APPENDIX H

INSTITUTIONAL REVIEW BOARD APPROVAL

FULLERTON
Graduate Programs and Research
Institutional Review Board
(657) 278-7640 Fax (657) 278-7238

APPROVAL NOTICE

From the Institutional Review Board
California State University Fullerton

Date: February 2, 2012

From: Ron Oliver PhD, Chairperson
CSUF Institutional Review Board

To: **Elise Flocken**
Department: Special Education, CP-570

Re: Use of Human Subjects in Research Project entitled
IPads and Self-Determination

The forms you submitted to this office regarding the use of human subjects in the above-referenced proposal were reviewed by the California State University Fullerton Institutional Review Board ("CSUF IRB") at their full committee meeting held **January 13, 2012**. Your proposal is approved.

The CSUF IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required.

If the above-referenced project has not been completed by **January 12, 2013** you must request renewed approval for continuation of the proposal.

It is of utmost importance that you strictly adhere to the guidelines for human participant and that you follow the plan/methodology/procedures described in your research proposal. Any change in protocol or consent form procedure requires resubmission to the CSUF IRB for approval prior to implementation. Additionally, the principal investigator must promptly report, in writing, any unanticipated or adverse events causing risks to research participants or others.

Please be advised that if you are seeking external funding for this proposal, the above-referenced title should match exactly with the title submitted to the funding sponsor. Any change in project title should be submitted to the CSUF IRB prior to implementation.

By copy of this notice, the chairman of your department [and/or co-investigator] is reminded that s/he is responsible for being informed concerning research projects involving human participants in this department [and should review all protocols of such investigations as often as needed] to ensure that the project is being conducted in compliance with our institutional policies and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protections. The Assurance Number is FWA00015394.

[illegible] Date
Application No. HSR-11-C408

REFERENCES

Bausch, M.E., & Jones, M. J., (2008). Assistive technology implementation plan: A tool for improving outcomes. *TEACHING Exceptional Children, 41*(1) 6-14.

Carter, E.W., Trainor, A.A., Sun, Y., & Owens, L. (2009). Assessing the transition-elated strengths and needs of adolescents with high-incidence disabilities. *Council for Exceptional Children, 76*(1), 74-94.

Correa, Vivian I., Jones, Hazel A., Thomas, Carol C., & Morsink, Catherine V. (2005) *Interactive Teaming: Enhancing programs for students with special needs.* 4th ED. Upper Saddle River, NJ: Pearson.

Cronis, T., & Ellis, D. (2000). Issues facing special educators in the new millennium. *Education, 120*, 639-649.

deFur, S.H. (2003). IEP transition planning-from compliance to quality. *Exceptionality, 11*(2), 115-128.

Dyal, A., Carpenter, L.B., & Wright, J.V. (2009) Assistive technology: What every school leader should know. *Assistive Technology Education,* 129(3) 556-560.

Duhaney, L., & Duhaney, D., (2000). Assistive technology: Meeting the needs of learners with disabilities. *International Journal of Instructional Media, 27*, 393-402.

Edyburn, D., Higgins, K., & Boone, R. (2005) Handbook of special education technology and research practice. 1st ED. Whitefish Bay, WI: Knowledge by Design

Hauser, J., & Malouf, D. (1996). A federal perspective on special education technology. *Journal of Learning Disabilities, 29,* 504-512.

Hetherington, S. A., Durant-Jones, L., Nolan, K., Smith, E., Taylor-Brown, S., & Tuttle, J. (2010). The lived experiences of adolescents with disabilities and their parents in transition. *Focus on Autism and other Developmental Disabilities, 25*(3), 163-172.

Herbert, M. (2010) The iPad- Breaking new ground in special education. *District of Administration.* Retrieved from http://www.districtadministration.com/viewarticle.aspx?articleid=2619

Janiga, S. J., & Costenbader, V. (2002). The transition from high school to postsecondary education for students with learning disabilities: a survey of college service coordinators. *Journal of Learning Disabilities, 35*(5), 462-468.

Johnson, D. R., Stodden, R. A., Emanuel, E. J., Luecking, R., & Mack, M. (2002). Current challenges facing secondary education and transition services: what research tells us. *Council for Exceptional Children, 68*(4), 519-531.

Messinger- Willman, J., & Marino, M. T. (2010). Universal design for learning and assistive technology: Leadership considerations for promoting inclusive education in today's secondary schools. *NASSP Bulletin, 94* (1) 5-16.

Nochajski, S., Oddo, C., & Beaver, K. (1999). Technology and transition: Tools for success. *Technology and Disability, 11*, 8.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9* (5), 1-6.

Williams, Michael, B., Krezman, C., McNaughton, D. (2008) "Reach for

the stars": five principles for the next 25 years of AAC. *Augmentative and Alternative Communication, 24*(3) 194-206.