Evaluation of Video Prompting To Teach Students with Intellectual Disabilities to Use a Cell Phone

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Evaluation of Video Prompting To Teach Students with Intellectual Disabilities to Use A Cell Phone

by

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ABSTRACT

Evaluation of Video Prompting Instruction to Teach Students with Intellectual Disabilities to Use a Cell Phone

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For students with ID communication cannot be taken for granted. Not only is it vital that students with ID be able to express their wants and needs on a daily basis, but communication is paramount in order to express ideas and consider options for their future as well as to build and maintain friendships. These are important elements for a successful transition from school to adulthood.

Ninety-five percent of adults without disabilities between the ages of 18-34 own cell phones compared to twenty-eight percent of adults with ID. This disparity is due in part to lack of access, training and support. As it is predicted that the cell phone-only lifestyle is a trend that will continue over time, students with ID need to be taught specific communication skills. This includes the digital skills necessary to use a cell phone.
Video prompting instruction has been used to teach students with ID a variety of skills. This method offers the ability to focus on specific tasks, materials, and settings. While affording a student the opportunity for repeated practice video prompts can also be viewed on computers, laptops, tablets, and phones.

This study focused on the evaluation of video prompting instruction to teach students with ID basic cell phone skills needed to make a call. A system of least prompts was used to guide the students through the video prompts. Data indicated that three of four students were successful in achieving criteria. The level of prompts decreased as the video prompting instruction progresses and two students maintained a percentage of the skills learned without any video prompting instruction.
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Dedicated to my children, Melody and Benjamin

With all my love
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CHAPTER ONE

INTRODUCTION

Cell phones have become personal and ubiquitous to today’s lifestyle. The need for cell phone skills, while important for safety concerns, is multifaceted. Cell phones provide for interpersonal communication via voice, video, text, and social networking. They also offer a variety of personal amenities (e.g., personal organizers, calendars, alarms, games, music). The use of a cell phone is no longer simply about convenience, but involves rudiments of digital social awareness and connection (Pewinternet.org, 2010). A cell phone, in today’s world, is more than a telephone. It has become a life tool that is fundamental to participation in a technological society (Prensky, 2011).

Students with intellectual disabilities (ID) have the same need and desire for digital skills in this quickly evolving technological society as do their peers without disabilities (Hallgren, Nygard, & Kottorp, 2011; Stock, Davies, Wehmeyer, & Palmer, 2008). Thus, it is necessary that they be provided opportunities to enhance digital normalization as well as establish a foothold to autonomous learning (Betts & Neihart, 1986). Digital skills and autonomy come together in the areas of communication skills, cell phones, and social integration for students with ID (Branzberg, 2007; Hallgren et al., 2011; Lachapelle et al., 2005; Manley, Collins, Stenhoff, & Kleinert, 2008). The use of a cell phone is a life skill that must be addressed in both secondary and postsecondary transition planning for students with ID to enhance digital normalization (Cohen, & Metzger, 1998; Kellems & Morningstar, 2010; Wehmeyer & Schwartz, 1997).

The *Individuals with Disabilities Education Act* (2004) mandates that a transition plan be in place by age 16 for an individual to facilitate a successful transition from school
to adult life. The transition age (16 to 22) is a critical time for students with disabilities to develop self-advocacy and self-determination skills, find their place within a community, and become a citizen of the world (Turnbull & Turnbull, 1985; Wehmeyer, Argan, & Hughes, 1998; Wehmeyer & Shalock, 2001; Wehmeyer & Schwartz, 1997). Therefore, an Individual Transition Plan (ITP) must be based upon the individual’s needs, preferences, strengths, and interests (IDEA, 2004). Person-centered planning uses the family, desire for friends, employment, and preferred lifestyle as the transition goals and objectives for transition (Kim & Turnbull, 2004; Wells & Sheeney, 2012). While not specifically stated in IDEA (2004), the ability to communicate with others has a profound effect on the transition process (Blacher, 2001; Powers, Singer, & Sowers, 1996). Interpersonal communication is comprised of the processes that allow an individual to create, recognize meaning, and interact with the world around them (Krauss & Fussel, 1996).

Communication is a skill that promotes interaction within a community and provides an outlet for expression of needs and wants to others (Schutz, 1966). It also impacts the ability to interact with others and establish friendships (Cohen & Metzger, 1998). Because friendship is an important construct of the overall quality of life, successful transition outcomes are correlated with the ability to establish and maintain friendships (Blacher, 2001; Turnbull et al., 2003; Wehmeyer & Shalock, 2001). In the digital world, communication with friends is synonymous with cell phone usage (Lenhart, Ling, Campbell, & Purcell, 2010). Thus, instruction in the use of a cell phone is timely (Manley et al., 2008). This is particularly true for students with ID who often need explicit instruction in multistep tasks (Mechling, 2005; Taber, Alberto, Hughes, & Seltzer, 2002; Test, Spooner, Keul, & Grossi, 1990).
Communication Defined

Humans are social animals as a matter of survival (Reddy & Legerstee, 2007). In order to maneuver within a social system, the ability to communicate needs and information among community members is essential (Scott-Phillips, 2010). The definition of communication is as diverse as the many fields in which it is used. Areas such as psychology, sociology, education, and technology interpret communication specific to their research foci (Reddy & Legerstee, 2007). However, the common core of human communication is the transference of information from one person to another, resulting in a common understanding (Owens, 2005).

The Field of Psychology

In the field of behavioral psychology, Schutz (1966) proposed an interpersonal communication framework based on three needs: (a) control (to direct others or be directed by them), (b) inclusion (to have or be included in relationships), and (c) affect (to receive or give affection). Roloff (1987) defined communication as a reciprocal interaction in which needs and fulfillment are based on the familiarity of the relationship. The more familiar the communicators are with each other, the better equipped they are to interpret each other’s needs and provide fulfillment. Personal gratification also is viewed as an element of communication and focuses on individual needs, motives, and the influence of social structures (Rosengren, 1974).

The Field of Sociology

In terms of communication, the field of sociology focuses on the purpose of public events and interpersonal relationships (Katz, 2009; Rubin & Rubin 1992). Thus, the sociological definition revolves around mass communication. Once a broad study of social
organizations, the definition has evolved due to the interdisciplinary nature of communication (Katz, 2009). Sociology has moved from a macro definition to a micro definition in which the individual is at the center. In an effort to define the motives of human communication, Rubin, Perse, and Barbato (1988) identified six reasons for the need to communicate: (a) control, (b) escape, (c) relaxation, (d) affection, (e) pleasure, and (f) inclusion. This need is satisfied as the individual communicates wants, needs, and interacts with the environment (Rubin et al., 1988).

The Field of Education

The purpose of education is to prepare young people to be productive members of society (Kellems & Morningstar, 2010). In the field of education, communication skills typically are integrated throughout the curriculum, with 30 states having oral communication requirements in their statewide curricular plans (Hall, Morreale, & Gaudino, 1999). The purpose of the curricula must be to teach communication skills needed to function successfully in life. These skills focus on oral competence and include the ability to respond to instructional interactions, ask questions, and further social contacts (Robinson, 1988). Pragmatic communication skills are considered vital to the development of relationships and interactions (Garvey, 1984). Being able to communicate via a cell phone is a pragmatic skill (Blair & Fletcher, 2011; Cleemput, 2011; Lenhart et al., 2010).

The Field of Digital Technology

Within the field of digital technology, the cell phone is defined by individualization that lends an immediacy and accessibility to communication. While approximately 80% of Americans use the internet via computers, roughly 88% of American adults and 79% of teens own a cell phone (Zickuhr & Smith, 2012). The majority of 18-24 year olds are not so
much addicted to the technology, but to the communication and socialization it provides (Nurullah, 2009). For youth, communication is entertainment as well as an entitlement (Rolfe & Gilbert, 2006). Cell phones encompass multiple venues of communication from calling, texting, emails, and tweets (Nurullah, 2009). These provide the development of both social skills and friendship circles that help adolescents define their sense of being (Lenhart et al., 2010). The wireless technology of smart phones has made communication more accessible for all income levels, due to reduced initial costs and monthly fees (Zickuhr & Smith, 2012).

For the purpose of this dissertation, communication is defined as transferring information from one person to another with the goal of a common understanding (Owens, 2005). This interaction with others can lead to normalization within the social environment. Today the cell phone is the communication tool of choice (Lenhart et al., 2010).

**Communication as an Autonomous Skill**

Autonomy is one of three innate psychological needs, the other two being competence and relatedness (Ryan & Deci, 2000). These elements are necessary for ongoing psychological integrity and growth, satisfying the need for autonomy and a sense of wellbeing (Wichmann, 2011). In turn, autonomy creates intrinsic motivation to learn, explore, and become independent (Steinberg & Silverberg, 1986). However, research indicates that while the need for autonomy is important to cognitive and social development it requires maintenance and supportive conditions (Ryan & Deci, 2000). People choose when and who to talk with on a daily basis and for a variety of reasons (e.g., social, work, information) (Rubin et al., 1988). Therefore, autonomous communication
skills allow individuals to make choices and connections that are an integral part of self-determined behavior (Deci & Ryan, 2000).

**Students without Disabilities**

The developmental processes of both receptive and expressive communication skills incorporate the: (a) use of the senses, (b) ability to focus without distraction, (c) attachment of meaning to words, (d) use of memory, (e) ability to imitate, and (f) ability to combine gestures, words, and facial expressions (Owens, 2005). However, the ultimate outcome is to convey a need or desire (Grosse, Behne, Carpenter, & Tamasello, 2010). When children reach adolescence, social demands increase as individuals become co-workers, companions, and friends (Coleman, 1980). Deci and Ryan (2000) maintain that supportive autonomy and structure lead to higher student engagement, motivation, and communication.

Adolescence and young adulthood is a time of reorganization and pursuit of autonomy. Individuals make decisions and initiate communication more with friends/peers and less with parents/family. This is a time when adolescents seek peer role models with whom they identify as an individual (Coleman, 1980; Steinberg & Silverberg, 1986). Currently, cell phones reflect a rite of passage and social status for young adults as well (Blair & Fletcher, 2011; Cleemput, 2011; Nurullah, 2009). They add a new personal dimension of communication potentially increasing autonomy (Lenhart et al., 2010; Zickuhr & Smith, 2012).

**Students with Intellectual Disabilities**

While students with ID may experience physical limitations and cognitive deficits, they are capable of and do demonstrate self-competence and autonomy (Powers et al.,
1996; Stock et al., 2008). They also share the need for acting in accordance with their own values and the desire for autonomy (Wichmann, 2011). Research indicates that aggressive behaviors exhibited by individuals with disabilities often are the result of their communications not being understood by others (Jahoda, Pert, & Trower, 2006). This leads to a sense of alienation, estrangement, humiliation, and self-protective actions (Jahoda & Markova, 2004). Being able to independently communicate when and with whom they want, addresses innate needs for autonomy and self determination (Deci & Ryan, 2000). Cell phones offer numerous ways to communicate and facilitate autonomy development (e.g., calling, texting, scheduling) as well as offering a tangible link to parents and independent living (Blair & Fletcher, 2011).

**Communication as a Social Skill**

Humans are social creatures and communication, however defined, is essential for active participation in the world (Scott-Phillips, 2010). It is the foundation upon which social skills are developed in early childhood as children learn to establish effective peer relationships (Bandura, 1977; Steedly, Schwartz, Levin, & Luke, 2008). These skills are the basis on which peer relations are built throughout life (Gresham, Elliot, & Kettler, 2010). Appropriate communicative social skills are imperative for beginning and continuing positive relationships, peer acceptance, and coping in a variety of social settings (Walker, 1983).

**Students without Disabilities**

The use of communication is inherent in the social structure within school and beyond. Basic peer-related social skills are developed in early childhood and continue to be
refined over time (Brigman, Lane, & Switzer, 1999). These skills are the foundation of communicative competence and include: (a) following directions, (b) listening, (c) using cognitive strategies, (d) maintaining friendships, (e) playing, and (f) working cooperatively with others (Wild & Sage, 2007). During the transition from childhood to adulthood, youth develop new social connections as they redefine family relationships and find their own identity (Coleman, 1980; Steinberg & Silverberg, 1986). They often turn to their peers for additional emotional support and behavioral feedback. This in turn establishes social skills as practiced with peers. This innate process of socialization for students without disabilities is the search for social affiliation and is instrumental in comprehending oneself in relation to social life (Cohen & Metzger, 1998; Coleman, 1980). A function of social affiliation is communication with peers and family that is essential to making plans and staying connected (Lenhart et al., 2010). Cell phones facilitate communication via various venues (e.g., text, emails, chats) as well as offering access to social networks and forums to express individual thoughts and ideas (Cleemput, 2011; Cohen & Metzger, 1998).

**Students with Intellectual Disabilities**

Individuals with ID are capable of communicative competencies such as turn taking, recognition of questions, greetings, and requests (Hall et al., 1999). They also are capable of formulating appropriate questions and responses (Guralnick, 1990). Communication for this population can run the gamut from non-verbal and gestural, to poor expressive capabilities, to verbal with poor cognitive processing (Owens, 2005). These communication delays may hinder peer-related social competence (Gresham et al., 2010). However, communication is important to students with ID in order to express ideas for their future and build friendships (Kellems & Morningstar, 2010). Many students with
ID also are aware of social stigmas that affect the ability to form friendships with their peers without disabilities (Jahoda & Markova, 2004). Therefore, students with ID need to be taught specific communication and social skills (Brigman et al., 1999; Gurlnick, 1990; Kim & Turnbull, 2004).

Ninety-five percent of adults between the ages of 18-34 own cell phones compared to twenty-eight percent of adults with ID (Bryen, Carey, & Friedman, 2007; Marketingcharts.com, 2011). Communication via cell phone can relieve social anxiety and, perhaps, enhance peer support that is considered an essential element of adolescent development (Conti-Ramsden, Durkin & Simkin, 2010; Powers et al., 1996). Thus, cell phones are both social and age-appropriate tools in the quest for digital normalization and social competence for individuals with ID (Nurullah, 2009; Stock et al., 2008).

Communication as a Component of Quality of Life

Often the quality of an individual’s life is interwoven with their social relationships (Schutz, 1966; Rosengren, 1974). By definition, quality of life is a multidimensional concept that is comprised of eight core elements: (a) self determination, (b) social inclusion, (c) personal development, (d) interpersonal relationships, (e) emotional well-being, (f) physical well-being, (g) personnel rights and access, and (h) material well-being (Schalock et al., 2002). The IDEA (2004) goal of independent living is congruent with self determination and the IDEA (2004) goal of full participation aligns with the components of social inclusion and interpersonal relationships (Turnbull et al., 2003). These elements are specific to the individual and the values they hold. A person’s perception of self and their environment is critical to their overall quality of life (Wehmeyer & Shalock, 2001). Thus,
to address and fulfill both IDEA (2004) goals and the quality of life components, communication by the individual with ID must be a key focus of instruction (Kellems & Morningstar, 2010; Lachapelle et al., 2005; Turnbull & Turnbull, 1996; Wemeyer & Shalock, 2001).

Communication is the foundation on which people build communities and interact in a social manner (Reddy & Legerstee, 2007; Scott-Phillips, 2010). Over half of individuals with ID reside in group homes or institutions as adults. Approximately 40% report feelings of loneliness and/or depression and 30% rarely or never receive phone calls (NLTS2, 2009). Having opportunities to participate and communicate in age-appropriate, peer-related activities and friendships are important elements of positive self-esteem and social affiliation (Cohen & Metzger, 1998; Coleman, 1980; Dagnan & Sandhu, 1999). Being able to make choices, such as with whom and when to communicate (e.g., family, friends), contributes to emotional well being, interpersonal relations, and overall quality of life (Lachapelle et al., 2005; Wehmeyer & Shalock, 2001). Cell phones are a tool that can aid in increasing autonomy and normalization in today’s digital world. Therefore, cell phones may provide increased communication, socialization, and normalization for individuals with ID.

**The Telephone as a Communication Device**

The patent for the original landline telephone was obtained in 1876. In 1947, engineers Ring and Young created hexagonal cells that were put on towers, thus the name cell phone (Engel, 2008). In 1973, Dr. Martin Cooper of Motorola placed a phone call using the first prototype of the handheld cellular phone. By 1977 cell phones were being
used by 2000 customers in Chicago, Washington D.C., and Baltimore (Engel, 2008; Lenhart et al., 2010; Wikle, 2002).

Due to advances in the computer chip and battery technology, the second generation of cell phones became much smaller (Engel, 2008). Short Message Service (SMS), or texting capabilities, became commercially available in 1995, web access was launched in 1999, and the first camera phone was produced in 2000 (Wilke, 2002). Today the fifth generation (5G) of cell phones offers streaming of television, radio, and videos as well as WiFi capabilities (Pewinternet.org, 2010).

The pay phone, invented in 1891, has traditionally been used for making calls from alternate locations, typically for emergencies. However, according to the Federal Communication Commission, the number of public pay phones has diminished from over 2.1 million to slightly more than 1 million in 2006 due to the cell phone phenomenon (Braun, 2008). Ehlen and Ehlen (2007) maintain that the cell-only lifestyle is a trend that will continue over time.

**Youth and Cell Phone Usage**

It is estimated that 79% of teens (17 million) own a cell phone (CTIA & Harris Interactive, 2008; Lenhart et al., 2010). Of these, over half consider their cell phone to be paramount to their social life, not just to make phone calls (Blair & Fletcher, 2011). These youth cite a sense of security and use of various applications (e.g., text, games, photos) as well as access to information as being major reasons to have a cell phone (Lenhart et al., 2010; Marketingcharts.com, 2011). For many adolescents, a cell phone is perceived as a form of self-expression and status as well as playing a role in the emancipation process.
Cell phones also fulfill interpersonal affiliation needs by increasing the ability for peer-based interactions (Cohen & Metzger, 1998).

The literature discusses the use of cell phones in education (Branzberg, 2007; Fullan, 2007; Prensky, 2005). Among the teens participating in the Pew Internet and American Life study, 77% of those with cell phones took them to school every day (Lenhart et al., 2010). The data indicate that 71% of teens access the internet as a major source for school projects and reports, 58% use school-based web sites, and 34% download study aides via their cell phone (Pewinternet.org, 2010). The use of student-owned cell phones as a tool to access online learning may provide a new educational instrument (Prensky, 2005).

**People with Intellectual Disabilities and Cell Phones**

Students with disabilities often view their disability as just one aspect of life (Power, Singer, & Sower, 1996). Research indicates that people with ID want to participate and access digital phone technology, but often lack the instruction, support, and financial resources (Bryen, Carey, & Friedman, 2007; Hallgren et al., 2011; Stock et al., 2008). Thus, as they mature, they want many of the same things and opportunities as their peers (Cohen & Metzger, 1998).

During adolescence, youth form their identities and rely on peers for advice and feedback (Cleemput, 2011; Coleman, 1980; Steinberg & Silverberg, 1986). Because teens believe a cell phone is essential to a social life, it has become a tool to reach out to others, interact over time, and be included (Lenhart et al., 2010; Marketingcharts.com, 2008). It appears that normalization now has a new component for students with ID, the cell phone. Access to and use of a cell phone may provide students with ID the same advantages as
their peers without disabilities, including a tool to increase autonomy and social interaction (Blair & Fletcher, 2011; Cleemput, 2011; Conti-Ramsden, Durkin & Simkin, 2010; Hallgren et al., 2011; Power, Singer, & Sower, 1996; Stock et al., 2008).

A cell phone provides an additional sense of independence, safety, and allows for easy and frequent communication with family and friends (Blacher, 2001; Lenhart et al., 2010). Thus, teaching young adults with ID the skills to use a cell phone qualifies as a transition skill in that it facilitates autonomous acts, self-regulated actions, self determination, and, ultimately, quality of life (Turnbull & Turnbull, 1985; Turnbull et al., 2003; Wehmeyer & Shalock, 2001; Wichmann, 2011).

**Teaching Students with Intellectual Disabilities to Use a Cell Phone**

For individuals with ID the ability to use a cell phone may be problematic due to a lack of social skills or cognitive processing challenges (Guralnick, 1990). Students with ID often require direct instruction and repeated practice to insure memorization (Schuchardt, Gebhardt, & Maehler, 2010). Research involving the education of individuals with disabilities to use landline telephones and cell phones has been successful (Horner, Williams, & Stevely, 1987; Leff, 1974; Leff, 1975; Manley, et al., 2008; Risley, & Cuvo, 1980; Smith, & Meyers, 1979; Taber et al., 2002; Test et al., 1990). The use of task analyses, task chaining, and a System of Least Prompts (SLP) has shown positive results in this area of instruction (Horner et al., 1987; Taber et al., 2002; Test et al., 1990).

**Task Analysis**

A task analysis is developed by breaking down a task into individual steps (Baine, 1982). This allows specific practice of each step needed to complete the desired task. Task
analyses have been used to teach students with ID to make an emergency call, use a pay phone, decide when to use a cell phone, and recognize key features of an iPhone (Bicard, Horan, Plank, & Covington, 2010; Riffel et al., 2005; Risley & Cuvo, 1980; Taber et al., 2002; Taber, Alberto, Seltzer, & Hughes, 2003; Test et al., 1990; Walser, Ayers, & Foote, 2010).

**Total Task Chaining**

Total task chaining is the act of teaching a task one step at a time, from the beginning, until the entire task is completed (Spooner & Spooner, 1984). This permits the individual the satisfaction of completion as well as allowing a more natural flow of responses and consequences (Kayser, Billingsly, & Neel, 1986). Total task chaining often is paired with a task analysis and some form of prompting. The majority of research on teaching students with disabilities telephone skills has used total task chaining (Horner et al., 1987; Manley et al., 2008; Risley & Cuvo, 1980; Taber et al., 2002; Taber et al., 2003; Test et al., 1990).

**System of Least Prompts**

The SLP allows an individual the opportunity to perform to their highest degree of accuracy before supplying additional outside guidance to complete a desired activity. The SLP has been used to teach students with ID: (a) waiter skills, (b) telephone skills, (c) pay phone skills, (d) generalization of telephone skills, and (e) how to use a DVD player (Cavkaytar, 2012; Manley et al., 2008; Mechling, Gast, & Fields, 2008; Riso & Cuvo, 1980). There were four levels of prompts used in this study: (a) verbal, (b) gesture/verbal, and (c) physical/verbal (d) incorrect/no response.
Video-Prompting Instruction

Video prompting instruction has been used with students with intellectual disabilities to teach functional tasks that are part of an individual’s environment (Mechling, Pridgeon, & Cronin, 2005). Video prompts are made by videotaping a desired task (from the participant’s point of view) and segmenting the video into individual steps. The steps are then introduced independently so the individual can complete each step before moving to the next (Alberto, Cihak, & Gama, 2004; Lagrice & Blampied, 1994; Sigafoos et al., 2005). Video prompting instruction is beneficial in that it can be personalized using specific settings, tools, models and audio that is familiar and motivational to an individual (Mechling, 2005). An individual may view an instructional video as many times as needed to learn and maintain a desired skill. Also, technology provides multiple devices with which to access video prompting instruction (Blair & Fletcher, 2011; Flores et al., 2012; Hammond, Whatley, Ayers, & Gast, 2010; Mechling et al., 2008).

Past research demonstrates that individuals with ID can be taught to dial or input phone numbers for safety purposes (e.g., police, fire, Doctor, 911) (Risley & Cuvo, 1980; Taber et al., 2002). However, the telephones of today are multipurpose digital tools. Such tools are part of independent daily living and how to use them should be taught as a transition skill within a functional curriculum to provide the highest level of function and independence in adult life (Blair & Fletcher, 2011; Snell & Brown, 2006).

Statement of the Problem

Adolescence for students with ID includes exploring age-appropriate skills, functional strategies, and life skills to make a positive transition from high school to post-
secondary education, and/or employment (Coleman, 1980; Steinberg & Silverberg, 1986). This includes social skills, friendships, independence, community involvement, and employment (Cleemput, 2011; IDEA, 2004).

Communication using cell phones has become ever-present in daily living. Thus, planning for digital normalization via cell phone skills should be part of transition planning and instruction. Because 79% of high school students have and use cell phones, it appears that a new transition skill has evolved as a necessary life skill for individuals with ID (Cleemput, 2011; Hallgren, et al., 2011; Lenhart et al., 2010; Powers et al., 1996). Adolescents and young adults have a desire to fit in with their peers and youth with ID are no exception (Coleman, 1980). The ability to function within the community social circle impacts employment, lifestyle, and relationships, all of which can be traced back to the individual’s ability to communicate or use communication tools (e.g., cell phones) (Lachapelle et al., 2005). Aside from positive safety benefits associated with having and using a cell phone, it is age appropriate and offers a foothold into the digital world.

The cell phone, as a personal communication device, expands opportunities to connect with peers in a consistent and frequent manner and is recognized as a status symbol as well as a form of self-expression in society (Cleemput, 2011; Lenhart et al., 2010). With cell phone use being a cornerstone of everyday life, it is important that individuals with ID have the fundamental digital skills necessary to access them as a life tool (Hallgren et al., 2011; Stock et al., 2008). The cell phone may provide students with ID a sense of security, social status, and increased access to friends.

The goal of teaching cell phone skills is to increase access to a quality of life that is comparable to peers without disabilities. Past research involving the education of
individuals with ID to use telephones has been successful (Conti-Ramsden, Durkin, & Simkin, 2010; Horner et al., 1987; Leff, 1974; Leff, 1975; Risley & Cuvo, 1980; Smith, & Meyers, 1979; Taber et al., 2002; Test et al., 1990). However, the telephone has evolved rapidly, making the teaching of basic digital skills a requirement for the transition plans of students with ID.

The purpose of this study was to instruct students with ID in six competencies of making a phone call: (a) turn on a cell phone, (b) scroll for a contact, (c) initiate the phone call, (d) speak to the person called, and (e) end the call. Video prompting instruction (VPI) paired with the SLP was used to guide students through a 16-step task analysis of making a phone call. The following research questions were addressed:

**Research Question 1:** Does video prompting instruction paired with the SLP increase the ability of students with moderate ID to use a cell phone?

**Research Question 2:** Will the level of SLP used to guide students with moderate ID to use the cell phone decrease with repeated use of the video prompting instruction?

**Research Question 3:** Will students with moderate ID be able to maintain the cell phone skills learned using the video prompting instruction?

**Significance of Study**

Cell phones are used by approximately 17 million youth in the United States to communicate and interact socially (CTIA & Harris Interactive, 2008; Lenhart et al., 2010). These communication skills are considered vital by young people for inclusion, personal identity, and social interaction (Graham, Barbato, & Perse, 1993). As a life tool, cell phone usage incorporates the need for basic digital awareness and affords the user the opportunity
to increase autonomous learning (Betts & Neihart, 1986). Research indicates that cell
phones also offer a sense of safety, social affiliation with peers, and increased opportunities
to communicate with friends and family (Cohen & Metzger, 1998). It appears that teaching
rudimentary cell phone skills is fundamental for normalization as students with ID
transition to adulthood and the technological society in which they live (Hallgren et al.,
2011).

There is a need for research regarding how to use technology with people with ID
(Bryen, Carey & Friedman, 2007; Stock et al., 2008). Anchored instruction for using a
telephone in the community has been shown to be effective (Taber et al., 2002, Test et al.,
1990). However, little research has been conducted concerning teaching students with ID to
use a cell phone. Teaching these students to use a cell phone contributes to research that
examines digital access for individuals with ID (Flores, et al., 2012; Kelly, Test, & Cooke,
2013; Manley et al., 2008; Mechling & Gast, 1997; Risley & Cuvo, 1980; Taber et al.,
2002; Test et al., 1990). The purpose of this study was to evaluate the effectiveness of VPI
to ascertain: (a) will VPI be effective in teaching students with moderate ID to use a cell
phone, (b) will the level of prompts decrease with practice, and (c) will VPI facilitate
maintenance of cell phone skills over time.

The need for people with ID to use the telephone for emergencies is well
documented since the mid-1970s (Leff, 1974; Leff, 1975; Risley & Cuvo, 1980; Smith, &
Meyers, 1979). Research indicates that people with ID can be taught telephone skills for
this purpose (Horner, et al., 1987; Manley et al., 2008; Taber et al., 2002; Taber et al.,
2003; Test et al., 1990). However, no current research exists dealing with the use of the
digital cell phone (e.g., menu, scroll, select). Because cell phones offer many applications,
students with ID need to be taught basic digital skills to use them as a tool to connect to work and their social network of family and friends.

**Limitations**

The limitations of this study are:

1. Data were collected in a self-contained, postsecondary classroom for students with ID. Thus, the findings may not generalize to other populations or classrooms.
2. Data were collected from postsecondary students, between the ages of 18 and 21. The interventions used in this study may not produce the same effects with younger students.
3. The student sample used in this study was based on convenience. Results may differ when a randomized sample is used.
4. No social validity was formally collected from students or parents. Therefore, reasons for having or not having access to a cell phone may differ among participants.
5. A “pay as you go” cell phone was used in this study. Thus, the skills learned in this study may not generalize to other types of cell phones.

**Definitions**

Many of the terms used in the study are often found in the field of special education research. Definition of terms is important to the understanding of the material. Therefore, the following terms have been defined for clarification.
**Autonomy.** Autonomy is the act of self-regulated behavior focused on personal interests, needs, and goals for overall well-being (Deci & Ryan, 2000).

**Cell phone.** A cell phone is a handheld telephone using cellular technology and capable of sending and receiving phone signals (Lenhart et al., 2010).

**Communication.** The transference of information from one person to another with the goal of a common understanding (Owens, 2005).

**Diffusion of Treatment.** When a treatment is influenced by an uncontrolled variable (e.g., sharing with others, overhearing instruction given to another) (Barlow, Nock & Harsen, 2005).

**Gestural prompt.** The use of a gesture to cue a person to a desired action (e.g., pointing) (Zirpoli, 2005).

**Independence.** The ability to live life based on personal values and preferences (Turnbull & Turnbull, 1985).

**Intellectual disability.** Intellectual functioning that is established to be more than two standard deviations below the mean using a general intelligence assessment approved by the American Association of Intellectual and Developmental Disabilities and includes delayed cognitive and language processing (Nevada Administrative Code, 2011).

**Individual Education Program (IEP).** An IEP is a document describing a student’s disability, specific needs, and strengths in order to receive an education that meets the defined needs (IDEA, 2004).

**Individual Transition Plan (ITP).** A coordinated set of activities, goals, and objectives that reflect the student’s strengths, weaknesses, preferences, and designed to facilitate skills needed to successfully transition from school to work (IDEA, 2004).
**Intrusiveness of a prompt.** Refers to the level of assistance required for a student to complete a task. A verbal prompt is considered least intrusive, followed by a gestural prompt (e.g., pointing). The most intrusive prompt is physical in nature (e.g., hand over hand) (Zirpoli, 2005).

**Pay as you go cell phone.** A cell phone with no monthly payment plan, no deposits, no credit checks, and service is paid for before it is used (att.com, 2012).

**Physical prompts.** A physical cue used to physically guide an action of another individual (e.g., picking up a person’s finger to touch a button) (Zirpoli, 2005).

**Quality of life.** Human values considered essential for positive life outcomes. These include: (a) rights, (b) social inclusion, (c) interpersonal relationships, (d) self determination, (e) material well-being, (f) physical well-being, (g) emotional well-being, and (h) personal development (Turnbull & Turnbull, 2003).

**Self determination.** The ability to make choices and decisions for life without undue interference or external influences (Wehmeyer & Schwartz, 1997).

**Self esteem.** The positive or negative evaluation of self (Luhtanen & Crocker, 1992).

**Social affiliation.** Social connections with individuals, groups, or concepts that help define an individual’s status in the environment (Cohen & Metzger, 1998).

**Social skills.** Skills that allow the individual to function positively with peers, develop social relationships, and effectively cope within the social environment (Steedly et al., 2008).
Stigma. A stigma is a perceived deviation from what is considered typical by the dominant society. This deviation is negatively perceived by others (Jahoda & Markova, 2004).

System of least prompts. A system of least prompts uses a verbal prompt, a gestural prompt, and a physical prompt respectively to aid an individual in the completion of a task (Zirpoli, 2005).

Task analysis. The analysis of how a task is accomplished and broken down into each individual step (Zirpoli, 2005).

Total-task chaining. A sequence of behaviors represented in individual steps and taught by completing each step in a single session (Zirpoli, 2005).

Verbal prompt. A verbal prompt is the use of words to cue a desired behavior (Zirpoli, 2005).

Video prompting instruction. A simulation strategy in which a desired skill is modeled via video for each step of the task analysis (Alberto, Cihak, & Gama, 2004).

Summary

Cell phones are the epitome of communication in today’s society (Blacher, 2001; Bryen et al., 2007; Stock et al., 2008). For adolescents, cell phones represent autonomy, social connectedness, and increased independence (Blair & Fletcher, 2011; Lenhart et al., 2010; Nurullah, 2009), all of which are important elements for quality of life as adolescents transition to adulthood (Turnbull, & Turnbull, 1985; Turnbull et al., 2003; Wehmeyer & Schalock, 2001; Wichmann, 2011). Students with ID must be taught to use a cell phone for safety, socialization, normalization, and as an age-appropriate life skill.
The National Longitudinal Transition Study (NLTS2, 2009) found that independent living, employment, and community integration remain unrealized for many with ID. These are all skills that must be addressed in functional curricula while planning for transition as supported by an Individual Education Program (IEP) (IDEA, 2004). The purpose of transition planning is to provide students with disabilities life skills, training, and knowledge of available resources (Blacher, 2001; Kellems & Morningstar, 2010).

Research indicates that people with ID have the desire to use a cell phone for interpersonal communication and social inclusion (Bryen et al., 2007; Cleemput, 2011; Stock et al., 2008). Cell phone skills represent a natural and age-appropriate skill necessary to maintain personal relationships, acquire digital skills, and access social normalization, all important characteristics of person-centered transition planning (Kim & Turnbull, 2004; Schwartz, Holburn, & Jacobson, 2000).
CHAPTER TWO

REVIEW OF RELATED LITERATURE

The ability to communicate with others has profound consequences on the transition process (Blacher, 2001; Powers et al., 1996). Because cell phones are the tool of choice for communication, knowing how to use a cell phone is an important life skill. Skills used on a daily basis are often the focus of a transition curriculum for students with intellectual disabilities (ID), due to their need for explicit instruction to implement multistep tasks (Mechling, 2005; Taber et al., 2002; Test et al., 1990). Because communication is a transition skill that can contribute to independence, the use of a cell phone should be considered a component of a 21st century transition plan (Bryen, Carey, & Friedman, 2007; Snell & Brown, 2006).

Social Learning Theory (Bandura, 1977) is based on the ability to learn through the observation of others who exhibit a desired skill or behavior. Research supports the use of observational learning with students with ID (Hammond et al., 2010, Smith, Collins, & Schuster, 1999; Smith & Meyers, 1979). Other methods that are successful in teaching life skills to students with ID include: (a) breaking down tasks into individual steps, (b) chaining the steps together of a total task, (c) using the system of least prompts, and (d) using video prompting instruction. Therefore, an intervention for students with ID that is based on a popular observed skill (e.g., cell phone use) combined with other research-based teaching methods could prove advantageous (Horner et al., 1987).

There are a limited number of telephone skill interventions that teach the dialing of phone numbers (e.g., telephones, cell phones) (Leff, 1975; Manley et al., 2008; Horner et al., 1987; Smith & Meyers, 1979; Taber et al., 2002; Test et al., 1990). However, they
incorporate many of the same instructional strategies that are used in teaching daily life skills to students with ID. There has been no research with a focus on basic digital skills needed to complete the steps needed to: (a) turn on a cell phone, (b) select a menu, (c) scroll for contact, (d) talk to contact, and (e) end the call.

Teaching Interventions for Students with Intellectual Disabilities

Interventions for students with ID have evolved from decades of observation and research (Cavaytar, 2012; Leff, 1975; Wolery, Ault, Gast, Doyle, & Griffen, 1990). These interventions include the use of: (a) task analysis, (b) total task chaining, (c) system of least prompts (SLP), and (d) video prompting instruction (VPI) (Alberto, Cihak, & Gama, 2008; Colyer & Collins, 1996; Davies, Stock, & Wehmeyer, 2002; Mechling & Hurdon, 2007; Sigafoos et al., 2005). Often, various methods are combined to teach complex functional tasks to individuals with ID.

Task Analysis

In order to teach complex tasks to people with ID, it is common practice to analyze the chosen task and identify each step necessary to complete it (Baine, 1982). The steps are then taught in sequence. This process is referred to as a task analysis and has been used for many years (Roberson, Gravel, & Valcante, 1992; Zhang, Horvat, & Gast, 1994). A task analysis can take the form of pictures, illustrations, a written list, or video clips.

Davies et al. (2002) implemented the use of a Personal Digital Assistant (PDA) to self-prompt students with ID. The purpose of the research was to use the PDA with the Visual Assistant program to decrease the need for teacher prompts when learning
vocational skills. The goal was to improve the ability of the individual to independently perform vocational tasks in the community.

The participants included ten individuals with ID ranging in age from 18-70. The adults were selected from a local agency that provided community-based vocational supports. The students were selected from a community-based transition program for students age (18-21).

The individuals with ID were first trained how to operate the Visual Assistant program. Task analyses of folding pizza boxes and packaging software were programmed into the PDA using pictures paired with audio instruction. Each task was identified by an icon on the PDA screen that, when pressed, would initiate the task instructions, display the first step in the task analysis, provide a Done button and proceed sequentially through the entire task.

Data were collected on the number of steps completed correctly and the number of errors made for each task. A two-group within subjects design using paired comparison t-tests was used to analyze the data. Results indicated a significant decrease in the number of prompts and errors made by the people with ID while performing vocational tasks with the PDA.

Davies et al. (2002) concluded that the PDA provided a positive experience for individuals with ID to increase independence when performing work related activities. All the participants expressed satisfaction with the use of the handheld palm-top computer. Davies et al. (2002) suggested that further research be conducted with a larger number of participants and with variety of individuals with disabilities.
Because functional community skills are important in acquiring independence, Mechling et al. (2005) investigated teaching students with ID to order food and respond to questions in fast food restaurants using computer-based video instruction (CBVI). The purpose of the study was to increase the correct number of verbal responses and the percentage of steps completed correctly when placing a food order.

Three students with ID, ages 17-20, participated in the study. The students were enrolled in a high school class for students with moderate to severe ID. The study took place in the high school library and generalization sessions were conducted at three community fast food chains close to school.

An 11-step task analysis was developed from a video of an adult: (a) walking into a restaurant, (b) ordering, (c) eating the meal, and (d) disposing of trash. The video was segmented and used to create a CBVI program. Pictures representing one task at a time were displayed on the computer screen. The goal was for the students to click and drag the pictures into boxes representing the correct sequence of the task. Responses were recorded and upon achieving criteria the students were taken to each of the three restaurants for generalization probes. A multiple-probe design across students was used in the study.

Data were graphed and analyzed via visual inspection. Results indicated that all three participants demonstrated an increase in their ability to respond correctly verbally. The skills were maintained with 75%-100% accuracy for up to 30 days.

Mechling et al. (2005) concluded that students with moderate and severe ID can be taught verbal restaurant purchasing skills using computer-based video instruction. They suggested that future studies include using CBVI to teach additional restaurant verbal skills (e.g., cancelling part of an order, social skills needed across formal restaurant settings).
They recommend that speech recognition and other future technologies be incorporated into CBVI as they become available.

Riffel et al. (2005) explored digital communication as a means to increase independence in vocational and life skills for students with ID. The purpose of the study was to examine self-monitoring, task completion, and productivity on transition-related tasks using a PDA program. The purpose of the study was to evaluate if use of the device would: (a) increase the number of correctly implemented steps without prompting, (b) decrease the need for external prompts, and (c) decrease the amount of time needed to complete each task.

Four students with mild to moderate ID, ages 16-20, participated in the study. All student IEPs contained transition goals. They attended a transition program for students with ID. The students also expressed an interest in using technology with their transition goals. The sessions were conducted at the school and into the summer during extended school year.

Every student had a specific transition-related task for which a task analysis was completed. For each task, digital pictures were taken of a student performing the specific task then downloaded into the computer software with corresponding verbal directions. An icon appeared on the main screen of the PDA representing each task. The students were taught to initiate the video task analysis by pressing the *Play* button and pressing the *Done* button after viewing the step. The students were allowed to push the *Play* button as many times as needed to understand the step in the task. Criteria were set at completing the task correctly for three consecutive days.
A multiple baseline design across subjects was used for this study. The data collected included the total number of prompts, percent of steps completed independently, and duration of the task. The data were plotted on a line graph. A visual analysis was used to analyze the data.

Results showed that three of the students attained the set criteria. One student did not achieve criteria due to a medication change, however this student did demonstrate progress. The total number of prompts decreased and the number of steps completed correctly increased. However, there were no real differences in the duration of tasks due to the use of the Visual Assistant Program. Additional data indicated that the participants self-selected to use the device more often than ask the teacher for help.

Riffel et al. (2005) concluded that students with ID can benefit from PDAs with video for self-prompting tasks. They suggested that future research use technology to increase positive transition outcomes. They recommended that research measure independence without a teacher or adult to ask for help.

Another facet of communication is passing information to an intended recipient. Bicard, Haron, Plank, and Covington (2010) designed a study to teach students with ID the task of receiving phone messages and relating them to others. The purpose of the study was to examine the effectiveness of general case programming to teach the students to take and deliver phone messages.

Four students with mild to moderate ID, ages 14-16, participated in the study. They were enrolled in a self-contained classroom at a school for students with disabilities. Their IEP goals related to daily living skills and the students had no previous training in taking
phone messages. Both instruction and generalization probes took place on the school campus.

A task analysis was developed for the steps involved in answering a telephone and writing a message. There were four categories identified for message delivery to the recipient: (a) immediate delivery, (b) delayed delivery, (c) immediate delivery called, and (d) delayed delivery called. Each student was trained in one of the delivery categories, but participated in generalization probes for all four categories. Role playing with the teacher was used to train the students. A multiple-probe-across-behaviors design, nested in an ABA reversal design, was used.

The number of task-analyzed steps completed and the number of message deliveries completed correctly were graphed and analyzed via visual inspection. The data indicated that the four students showed a similar ascending trend during training and generalization. This positive correlation suggested that the general case programming was effective in training new skills in a generalized setting.

However, Bicard et al. (2010) concluded that the study had limitations. First, there was no level of reversibility of the tasks to demonstrate a functional relationship between the use of general case programming and student performance. Second, due to the use of textual prompts, the authors were uncertain if the general case programming alone was responsible for student success. Third, since the data showed a learning trend during the probe conditions, the students may have learned through repeated practice provided by the probes. Finally, the generalization probes did not include any real phone calls from outside the school.
Thus, Bicard et al. (2010) suggested that future studies using general case programming consider the ability levels of the students when choosing a research design, because the students in this study immediately showed generalization. They recommended separating the general case programming from the use of prompts and providing fewer probe sessions to control for repeated practice. They also suggested the use of real life situations for generalization.

Because cell phones can be used in a variety of ways, Walser et al. (2010) taught students with ID to use the key features of a cell phone. The purpose of the study was to evaluate the use of video modeling to teach students with ID to independently access photos, video, and the camera on an iPhone. Three high school students with moderate ID, ages 17-22 participated in the study. The students were selected because of their IEP goals related to recreation and leisure. The study occurred on the public school campus the students attended.

Video of an actor’s hands using an iPhone were taken of each task. Then task analyses were completed for each step needed to access the camera, videos, and photographs. Data were collected on the students’ skills (e.g., independence, error type) before and after viewing a video-modeled task. The sessions consisted of a target-skill probe, video modeling instruction, and post-video practice. The students needed to achieve a 100% on one task probe before moving to the next task. A multiple-probe across behaviors and subjects design was used for the study.

The data were graphed and analyzed via visual inspection. All three students mastered the targeted skills and demonstrated the ability to generalize them to more complex skills when additional icons were added to their cell phones. The errors that
occurred most frequently were not pushing the correct button and not holding a button long enough for it to produce an outcome.

Walser et al. (2010) concluded that video modeling contributed to the students learning how to use the iPhone to take pictures, look at the photo album, and watch videos. They maintained that the training and practice procedures were instrumental in learning the more complex applications on the phone. They suggested that future studies consider the nuances that cannot be taught by viewing a video (e.g., the pressure needed to touch or push buttons).

Task analyses offer the opportunity to teach (and learn) a skill one step at a time. For individuals with ID, this is especially advantageous in that it allows for repeated practice geared for an individual’s learning pace. A task analysis may be in written form, pictorial, auditory, or video. It can also be individualized for environment, models, and tasks.

**Total Task Chaining**

The teaching of multistep tasks is an important aspect of working with individuals with ID. Functional skills are broken into steps and taught in a sequence, one step at a time. The total task chaining strategy involves starting at the beginning of a task and moving through each step until the task is complete (Spooner, Weber, & Spooner, 1983). The advantage of total task chaining is that the individual has the satisfaction of performing the skill as a whole and in context (Test & Test, 1984).

Hunt, Alwell, Goetz, and Sailor (1990) examined the generalization effects of conversation training using prompts to complete a conversation (total task chaining). Specific research issues included: (a) the effectiveness of picture prompting to teach
students with severe ID to initiate and maintain a conversation with various partners across settings, (b) the degree to which the conversation skills generalized to non-instructional settings, and (c) if an increase in conversation skills was accompanied by a decrease in excess behaviors. A multiple baseline design across subjects was used for this study.

Three high school students with ID participated in the study. The participants included two boys and one girl, ranging in age from 17-18. Their initial mean length of utterance (MLU) ranged from 2-6 words. Thirty-three students without disabilities served as conversation partners. Training and generalization probes were conducted in a variety of campus settings and at job sites during work breaks. Selection of the sites used was dictated by the availability of the peers without disabilities and the program schedule. Conversation topics included activities, people, and things the students with ID enjoyed.

Communication books were developed using colored pictures associated with the selected topic areas for each student with ID. The conversation partners without disabilities were trained to provide a cue to prompt the students with ID to respond. During the baseline, instruction, and probe sessions a plus (+) was recorded if the student with ID initiated conversation verbally and/or removed the communication book from its pouch. A conversational turn was recorded each time the student responded appropriately and made an additional comment that served as a cue to his/her partner without disabilities to continue the conversation.

Data were graphed and analyzed using visual inspection. The three students with ID made significant gains using the communication book during the instructional sessions and independent practice. The generalization probes showed similar results with a significant increase in conversational turns when the students used the book during both instruction
and independent practice. In addition, the increase of communicative behaviors of the students with ID resulted in a decrease of inappropriate behaviors.

Hunt et al. (1990) concluded that students with severe ID can be taught conversational skills. In their study, the specific skills taught were initiation of communicative social interactions and reciprocal turn taking. They found the skills also generalized to new partners and settings.

Hunt et al. (1990) recommended that future studies use a qualitative assessment of the effect of communication skills for students with ID. They suggested that research should evaluate the development of friendships and maintenance of them when conversation skills are learned. They also recommended the generalization of these skills to home, family, and potential partners.

Hughes, Harmer, Killian, and Niarhos (1995) conducted a study to train four high school students with ID to use conversation skills to increase their interaction with their peers without disabilities. The purpose of the study was to apply multiple-exemplar, self-instructional training using peers to increase the acquisition and generalization of conversational skills.

Four girls with ID, ranging in age from 17-21, in a secondary transition program participated in the study. Ten peers without disabilities volunteered to serve as mentors. In the generalization phase, 57 students (19 students with disabilities and 38 students without disabilities) served as conversational peers. The study was conducted on a high school campus and included the: (a) lunchroom, (b) classroom, and (c) multipurpose room.

The general education peers were trained to use the strategy. They in turn, trained the students with ID. Daily practice occurred with the conversational peers. The self-
instruction was a four-step, total-task chaining strategy in which the students talked (or signed) to guide their conversations. The students with ID were taught to: (a) state the problem (“I want to talk”), (b) give a response (“I need to look and talk”), (c) evaluate the response (“I did it, I talked), and (d) provide reinforcement (“I did a good job”). The outcome measures consisted of if the student initiated a new topic, expanded an existing topic, responded to a partner, or looked toward the person speaking.

Data were plotted on a line graph and analyzed using visual inspection. Results indicated that the students with ID made rapid increases in initiation, response, and looking at the person talking when the intervention was introduced. The four students with ID all achieved the set criteria in training and generalized the use of conversational initiations and looking at the person speaking.

Hughes et al. (1995) concluded that multi-exemplar, self-instructional training delivered by peers was responsible for the generalized effects across a large number of diverse partners and settings. They maintained that the data indicated that peers used as teachers were effective and reliable to teach conversation skills to students with ID. Hughes et al. (1995) suggested that future research replicate the multi-exemplar, self-instructional model to teach conversation skills to increase the participation and acceptance of students with ID.

Hammond et al. (2010) used video modeling via computer to teach three technology tasks using an iPod. The purpose of the study was to evaluate the use of video modeling to teach students with ID to independently access photos, music, and video on an iPod.

Three girls with ID, ages 12-14 years, participated in the study. None of the students had used an iPod as shown by their baseline performance. They had not received
instruction through video modeling before this study. All three students were enrolled in a self-contained classroom.

Correct and incorrect responses for each step of the task analysis were recorded as the students progressed through the total task. Error responses were recorded by type: (a) latency (the student did not initiate the task within 15 seconds or following a previous task), (b) duration (the step was not completed within 15 seconds), or (c) topographical (the step was completed incorrectly or out of sequence). A prompt system was not incorporated in this design. However, if a verbal, model, or physical prompt was delivered it was recorded as a tally mark on the data sheet. Criterion was set at 100% accuracy on the pre-video probe for two days. The design used for this study was a combination multiple-probe across subjects and behaviors.

The number of steps completed independently was recorded on a line graph. The number of errors for each condition (latency, duration, topographical) was displayed in a table. A visual inspection was used to analyze the data.

Results indicated that the three students with ID were successful in learning to operate the iPod to access photos, music, and video. Two of the students maintained the criterion, with one student demonstrating criterion through only one maintenance probe. All students required an extra session to access music and one student required an extra session to access photos. The data showed a functional relationship between the instruction using video modeling and the number of correct steps for all iPod tasks.

Hammond et al. (2010) recommended that future research focus on different abilities and age groups. They also suggested that research focus on using an unfamiliar voice in the training videos and modifying the menu on the iPod to limit selection options.
They believe future research should compare video modeling to video prompting instruction.

Zisimopoulos, Sigafoos, and Koutromanos (2011) used total-task chaining to teach computer skills to students with ID. The purpose of the study was to teach the students to download pictures from the Internet. The students were taught to access the Internet and download pictures for a classroom history project. Three elementary students with ID participated in the study. All students were included daily in general education classes.

A 29-step task analysis was developed to teach the specific skills. Individual video clips of each step were used to demonstrate the skills. Data were collected using the task analysis with a plus (+) or minus (−) indicating correct or incorrect responses. When an error was made by a student, the teacher made the necessary corrections for the student to continue and complete the task. The type of error was recorded (T for topographical error, S for sequential error, D for duration error, and NR for no response). A multiple baseline design was used for the study. The percent of independently completed responses were charted on a line graph. The data were analyzed via visual inspection.

The data indicated that the students were successful in downloading pictures from the Internet. During the follow-up sessions, independent performance was maintained with a range of scores of 82.7-96.5%.

Zisimopoulos et al. (2011) concluded that VPI was effective in teaching students with ID to access the internet, thus increasing their access to the general education curricula. They suggested that future research address the need for traditional VPI to teach less familiar technological skills. They also recommended the use of repetition in viewing the video prompts as an error self-correction technique.
Duttlinger, Ayers, Bevell-Davis, and Douglas (2012) investigated the use of pictures to self-prompt through a total sequence of verbal directions. The purpose of the study was to investigate the effectiveness of picture activity schedules (PAS) when used to augment verbally-requested tasks (total task chaining).

Four students with mild to moderate ID, ranging in age from 11-15, participated in the study. The students’ IEP goals emphasized independence both at school and in the community. The study was conducted on a school campus with generalization trials conducted in the food court of a local mall.

The pictures chosen for the PAS were based on the individual student’s ability to associate the picture to the corresponding task and complete the task (e.g., wash hands, apply Chap Stick, brush hair, sharpen a pencil). During the intervention phase, the teacher directed the student to complete a sequence of three to five tasks (depending on the individual). The student then identified the corresponding pictures associated with the tasks in their PAS and moved them to the to do side of the PAS. These served as a visual reminder of the tasks they needed to complete. The student then proceeded to the tasks. A withdrawal design (A-BC-B-A-B) was used for the study.

Student responses were scored as independent or prompted. The percentage of tasks completed independently was graphed and analyzed via visual inspection. Generalization was assessed using a pretest/posttest. Pretest results indicated a mean of 43%, without using the PAS. Posttest data showed that all students achieved 100% when using the PAS, including in the generalization phase.

Duttlinger et al. (2012) concluded that there was a functional relationship between using the PAS and the students being able to complete verbally requested tasks.
independently in the classroom and community setting. While the students demonstrated an increase in their ability to finish an assigned sequence of tasks when given verbal direction, they also completed the tasks in the order assigned. Duttlinger et al. (2012) maintained that the task-related pictures created a visual task list that allowed the students gain independence and appreciate completing their tasks without supervision. Duttlinger et al. (2012) suggested that future research investigate the use of a PAS in alternate settings (e.g., home, job site). They also suggested that future research use a PAS for chaining more complex skills (e.g., laundry, bed making).

Total task chaining has proven effective in teaching students with ID a variety of skills (e.g., conversation skills, iPod use, internet skills, following directions). Being able to chain the steps of a task together through the entire task, provides continuity for students with ID. Completion of a task also increases student motivation (Test & Test, 1984).

System of Least Prompts

The System of Least Prompts (SLP) has been successful in teaching skills to individuals with ID for many years (Wolery, Ault, Doyle, & Gast, 1986). Often, the SLP is used to guide students with disabilities through the individual steps of a task (Test et al., 1990). This allows for the satisfaction of accomplishment, which in itself can be motivating. The SLP generally has three to five levels of prompts: (a) independent, (b) verbal instruction, (c) gesture with verbal, (d) model with verbal, and (e) physical with verbal (Taber et al., 2002).

Mechling and Gast (1997) assessed the effectiveness of an audio visual device to self-prompt students through an entire task to increase the total number of steps done correctly. Two girls and two boys with ID, ages 10-13, participated in the study. The setting
was a private school for students with mild to profound physical and/or intellectual disabilities.

A five-level SLP was used to move the students through the steps of four tasks: (a) verbal, (b) elaboration/verbal, (c) gesture/verbal, (d) model/verbal, and (e) physical/verbal. There were two types of correct responses, an independent correct response or a correct response following the audio/visual prompt.

The students received training on the use of the audio/visual device individually in the lunch room, while all other sessions were conducted around the campus. The device training included: (a) pressing a picture, (b) performing the step, (c) taking the picture off the device and putting it in a container, (d) moving to the next picture, left to right, and (e) moving down to the next row when finished.

The tasks taught included making a peanut butter and jelly sandwich, making microwave popcorn, dishwashing, and sorting/putting away groceries. The audio/visual device was pre-programmed with pictures and audio for these tasks. The students could press the picture to play the audio directions as many times as needed. The SLP was used to prompt step completion. Criteria were set at 100% for three consecutive sessions for each phase before the students moved forward in the study. An A-B-A-B design was used for the study.

Data were collected on the number of correct responses. The percentages of correct responses were charted on a line graph. A visual inspection was used to analyze the data.

The data indicated a significant increase in the range of steps completed correctly for all students when using the device. The students increased the number of steps
completed correctly on the tasks. When asked to perform the unrelated task of drying clothes, the device (left on a table by the dryer) was used unprompted by all four students.

Mechling and Gast (1997) concluded that students with moderate ID were successful in using the audio/visual device with the SLP to increase task completion independence. All students indicated that they wanted to use the device again. Mechling and Gast (1997) suggested that further research include the use of self-prompting systems in work, recreational, and domestic settings. They also recommend research focus on weaning individuals from the prompting device once a skill is learned.

In a study designed to use natural cues, Coyle and Collins (1996) worked with students with ID to enhance their communication skills when making purchases. The purpose of the study was to evaluate the effectiveness of using multiple natural cues within the SLP for students to learn rounding up to the nearest dollar (the next dollar strategy) and generalize the strategy in community settings.

Three boys and one girl with ID, ages 12-15, participated in the study. All students were enrolled in a program for students with mild to moderate intellectual disabilities. Instruction occurred at school while the generalization probes were conducted across nine settings during community-based instruction (CBI).

Using index cards and real money, a flash card was presented to the student with the price written on it. The teacher stated the price and then provided prompts from least to most intrusive, consisting of a variety of natural, verbal, and visual cues until the correct amount of money was presented by the student. The SLP hierarchy consisted of: (a) an independent response, (b) a flash card presentation with verbal prompt (e.g., “six seventy-five”), (c) a flash card presentation with an expanded verbal prompt (e.g., “six dollars and
seventy-five cents”), (d) a flash card presentation with an expanded verbal prompt and direction (e.g., “six dollars and seventy-five cents; give me six dollars and one more for cents”), and (e) a model demonstration and verbal explanation (e.g., “one, two, three, four, five, six dollars, and one more for cents”). A multiple-probe across participants design was used for the study.

Data were collected on the level of prompts needed in each probe. The correct responses were plotted on a line graph. Data were analyzed with a visual inspection.

The data indicated that all four students with ID achieved criteria. Three of the four students were able to generalize the skills in the community. However, the school year ended before the fourth student had the opportunity to generalize the skills. A functional relationship also was demonstrated between the natural cues (e.g., various verbal and visual stimuli) within the prompt levels and acquisition of the next dollar strategy for three of the four students.

Coyle and Collins (1996) concluded that the next dollar strategy combined with the SLP was a successful method for teaching students with ID to provide the correct amount of money to a cashier when making a purchase. Coyle and Collins (1996) suggested that future research focus on the comparison of natural cues within the SLP and include other instructional strategies to teach the next dollar strategy. They recommended examining the use of natural cues embedded in the SLP compared to the more traditional hierarchy of verbal-model-physical prompts. They also suggested expanding the number of opportunities to use the next dollar strategy in the community setting.

Being able to learn information through non-verbal communication and daily observation of peers provides a more holistic understanding of a task. To learn more about
this relationship, Smith et al. (1999) examined observational learning for students with moderate to severe ID. The purpose of the study was to assess the effectiveness of the SLP to teach and generalize a life skill for students with severe ID. They also measured the effect of the observation of related, although not targeted, skills.

Two girls and two boys with moderate ID, ages 16-18, participated in the study. The students participated in a functional skills curriculum in their high school class. The training sessions were conducted in the classroom and generalization probes occurred around campus and at a local church.

The task taught was cleaning tables. The SLP hierarchy used for training was: (a) independent, (b) verbal prompt, (c) model prompt, and (d) physical prompt. During training, the type of prompt used successfully by the student was recorded. The teacher prepared and put away the materials before and after each training session under the observation of the students. Thus, preparing the materials and putting them away were the targeted skills of the observational learning. A multiple-probe design across participants was used for this study.

The number of sessions to reach criteria, the number of instructional minutes, and the average length of sessions were recorded. The observational learning data were recorded in the form of pretest/posttest. The data were analyzed with a visual examination.

The results indicated that the SLP was effective in teaching the students how to clean a table as they achieved criterion. The observational learning prior to instruction showed that the students were able to perform between 0-3 steps of preparation and putting away the materials. Following instruction and observation, the number of steps completed by the students to prepare the materials and put them away increased to 11 of 15 steps.
Smith et al. (1999) concluded that the SLP procedure using multiple exemplars was an effective method to teach students with moderate to severe ID daily living skills. They suggested that future research continue to focus on the SLP using multiple exemplars with diverse populations. They also recommended targeting other skills that can be learned through observation (e.g., sorting, matching).

In a study designed to teach the use of self-management skills in conjunction with cooking, Mechling et al. (2008) combined the use of the SLP and a DVD player to teach students with ID. The purpose of the study was to evaluate the use of a portable DVD player to self-prompt the students to complete multistep cooking tasks.

Three students with moderate ID, ages 19-22, participated in the study. Each student had experience in food preparation as well as IEP objectives for food preparation. All sessions were conducted in the kitchen of an apartment used for life skills training.

A video, with audio, was recorded of making a grilled cheese sandwich, preparing ham salad, and making a Hamburger Helper Microwave Single. The video was downloaded onto DVDs. The SLP in the study included three levels: (a) a self prompt (using the skip repeat button to review the video and complete the step correctly), (b) a verbal prompt from the teacher (e.g., “Press the skip repeat button.”), and (c) a gesture plus verbal (the teacher said, “Press the skip repeat button” as he pointed to the skip button and the student would review the video and complete the step). A multiple-probe design across tasks and participants was used for the study.

The levels of prompts were recorded for each probe. The percent of steps performed correctly were recorded on a line graph. The data were analyzed via visual inspection.

Mechling et al. (2008) concluded that students with ID can be taught to
self-manage the use of audio/visual instruction. The data supported the use of the DVD player to provide self-management through the use of VPI with the SLP. All three students demonstrated an immediate increase in the number of independent correct responses for all tasks when using the DVD with VPI. The maintenance data for the students ranged from 96.2% - 99.3%.

Mechling et al. (2008) suggested that future research include the evaluation of the effectiveness of student-operated, self-prompting videos that used a computer, portable DVD player, or other portable technology. They recommended the clustering of the steps of a task analysis in the video segments (e.g., remove the mayonnaise from the refrigerator and put it on the table). They also recommended investigating more technological advancements that may offer increased opportunities for individuals with disabilities.

Cavkaytar (2012) used the SLP to teach vocational skills in a real-life setting. The purpose of this study was to evaluate the efficiency of the Café Waiter Education Program (CAWEP) that incorporated a system of least prompts. The participants included three youth with ID, ages 18-22, who attended a social life center on a daily basis. The training took place in a café setting that served as a training site for individuals with ID.

Five skills were identified for the study: (a) take a customer’s order, (b) set the table, (c) serve the food, (d) clear the table, and (e) clean the table and arrange the chairs. Each of the steps could be performed correctly, incorrectly, or with no response. The students worked one-on-one with an experienced waiter to learn the skills. The criteria for completing a task was 90% of the steps completed correctly.

During the training phase, if a student did not initiate a response or performed an incorrect response within 3 seconds, a non-descript, low level prompt was given. If no
response was given or the response was incorrect, the degree of prompt would increase to the next level of restrictiveness (e.g., gesture, model, physical). A multiple-probe across subjects design was used for the study. Qualitative data were also collected via interviews with participants, families, employers, and customers.

The performance levels were based on the number of correct responses. The data were plotted on a line graph. The graph was analyzed using a visual inspection. Qualitative responses were represented by the number of persons satisfied.

Results indicated that the three participants reached an independent level of waiter skills at the end of instruction in the real setting. Data collected from the interviews indicated that everyone was satisfied with the waiter training program. Customer satisfaction with the service provided by the participants was 98%.

Cavkaytar (2012) concluded that the Café Waiter Education Program (CAWEP), using the SLP, was effective and efficient in training individuals with ID to set a table, take orders, serve food, clear a table, clean a table, and arrange chairs. Cavkaytar (2012) suggested that future research include other errorless teaching methods such as video modeling or computer-assisted instruction. He also recommended training students with ID in real job settings.

The system of least prompts (SLP) allows a student an opportunity to demonstrate their ability and understanding of a task to the fullest extent before requiring assistance. It is often used in conjunction with a task analysis (to learn each step of a task) and total task training to experience a task as a whole. The SLP can be used to learn a specific task such as cleaning a table or learn how to operate instructional technology.
Video Prompting Instruction

Video prompting instruction (VPI) is defined as video segments of individual steps of a task being demonstrated one step at a time (Mechling, 2005). This provides the viewer with a model of each step necessary to complete a given task (Alberto, Cihak, & Gama, 2004; Lagrice & Blampied, 1994; Sigafoos et al., 2005). The video medium provides for individualization of tasks and locations, a real model of each step from a self-perspective, and multiple opportunities to practice each skill (Mechling et al., 2008; Horn, Miltenberg, Weil, Mowery, Conn, & Sams, 2008).

In a study designed to assist students with ID to access educational technology, Le Grice and Blampied (1994) used technology to teach technology. The purpose of the study was to use VPI to train adolescents with ID to use a video recorder and personal computer. A multiple-probe design was used in this study.

Three boys and one girl with moderate ID, ages 13-15, participated in the study. All students were residents of a metropolitan center for individuals with ID in which instruction was provided. Generalization data were collected in a general education classroom.

Two VHS video tapes were made for training purposes. One contained a task analysis of operating a video recorder and the other featured a computer task analysis showing how to turn the computer on and shut it down. During instruction, the trainer gave the instruction to insert, play, and watch the video. The student would view the video prompt via the laptop up to three consecutive times if needed. After five minutes of interacting with the computer or viewing a video, the trainer gave the instruction to turn off the equipment. The student then followed the steps to shut down the computer or video.
recorder. Criteria were set for correctly performing each task three consecutive times. Maintenance was conducted one or two weeks after achieving criteria.

A correct response was recorded if the step was performed unprompted within 5 seconds. Data were collected on the number of correct steps completed for both the video recorder and the computer task. The data were charted on a line graph and analyzed via visual inspection.

Results showed that the four participants learned to use the video recorder and a computer using VPI. The students who learned to start up and end the use of the video recorder maintained their 100% criteria through maintenance. Three of the four students who learned to start up and shut down the computer maintained their performance, while one student required an extra training session to regain criteria performance.

LeGrice and Blampied (1994) concluded that VPI was a viable training technique for students with ID and suggested exploring VPI for independent and peer-mediated learning. They recommended further research concerning methods to increase the durability of the skills learned using VPI and the retention of a previously learned skill through VPI.

Sigafoos et al. (2005) conducted a study using VPI to teach life skills to adults with ID. The purpose was to evaluate the effectiveness of VPI to teach microwave skills.

Three adult men with developmental delays participated in the study. They attended a vocational training program and lived in group homes. The men were selected for the study based on their need to learn snack/meal preparation skills. Training took place in the kitchen at the vocational training program.
A video was created on making microwave popcorn. The video was segmented into each step of the task and included corresponding verbal instructions. The participants were instructed to first watch and then repeat each step using the materials indicated in the video. If the step was not completed within 30 seconds, the trainer completed it and moved to the next video prompt until the task was completed. Following the video training, two participants continued to the second baseline while the third participant failed to meet criterion and did not progress. Three generalization trainings were conducted immediately following the students achieving the criteria of 5-6 successive sessions with 100% of the steps completed independently. The research design used was a delayed multiple-probe across subjects.

The data were collected on the number of steps completed correctly. The percentage of correct responses was plotted on a line graph. This resulted in a visual inspection of the data.

Results indicated that the individuals with ID were able to learn the use a microwave oven using VPI. Sigafoos et al. (2005) concluded that VPI was an effective method to teach adults with intellectual disabilities various task. They suggested that future research compare VPI both with and without embedded audio instructions. They also recommended teaching adults with ID the skills to self-deliver video prompts.

In a study focusing on daily use of digital skills, Cihak, Test, Taber-Doughty and Gama (2006) compared static pictures to VPI for teaching the use of a debit card at an automatic teller machine (ATM) and use the card in a retail setting to pay for daily purchases. The purpose of the study was to compare pictures to VPI, using group instruction in combination with community-based instruction (CBI).
Six boys with moderate ID, ages 11-12, participated in the study. Two groups of three students received instruction in classrooms located at two different middle schools. The community-based instruction occurred at local grocery stores near each school.

The video for the study was filmed from a first-person point of view. The video was segmented into sequential steps required to use the ATM and make a purchase using the debit card. Pictures also were created for each step of the two tasks and put in an album. The students were given a debit card and a personal identification number (PIN) to use at the ATM and the debit machine when making a purchase. An adapted alternating treatment design was used for the study.

Data were collected on the percent of correct responses and the number of sessions to criteria. Data were graphed and analyzed using visual inspection. The data indicated that the six students achieved criteria and maintained the skills needed to use a debit card at an ATM to withdraw money and use the debit card to make purchases. Four of the students displayed no functional difference between the VPI and static picture strategies. Two students demonstrated a moderate difference favoring the use of pictures in the album over the VPI intervention.

Cihak et al. (2006) concluded that there was no functional difference between VPI and static pictures in terms of the percent of correct responses to acquisition and the number of sessions to reach criteria. However, picture prompts were modestly more effective for two of the students.

Cihak et al. (2006) made several suggestions for future research. These focused on the model in the video (e.g., a known person, an unknown person, or a peer). They also recommended making various choices when designing the video (length of video, viewing
time). They believe that future research should investigate group video instruction versus individualized video instruction.

Mechling and Gustafson (2009) conducted a follow-up study of the Cihak et al. (2006) study to compare the use of static pictures to video prompting instruction to teach cooking-tasks. The purpose of the study was to compare the effectiveness of photographs to VPI for teaching students with ID to complete cooking related tasks independently.

The participants six students with moderate ID students, ages 18-22. All students had previous experience with either static picture prompting or VPI. The study was conducted in a school district apartment used specifically for the purpose of teaching daily living skills.

Two sets of ten cooking-related tasks were used from three picture cookbooks designed for non-readers. The videos were of an adult modeling each of the cooking tasks and included verbal prompts (e.g., grate the cheese). The static pictures were drawings or photographs from the cookbooks, with each picture representing one cooking task. A verbal task direction was given (e.g., peel the carrots) by the teacher and the student was given 3 seconds to initiate a response, using either the picture or VPI, and 1-minute to complete the task. An adapted alternating treatment design was used in the study.

Data were collected on the number of tasks a Student completed correctly. The percent of correct responses were charted on a line graph. Data were analyzed using a visual examination.

The data indicated that both the static pictures and the VPI helped aid students to correctly perform the cooking tasks. While five of the students’ performances were higher
with the VPI, one student’s performance was the same for both static pictures and video prompting instruction.

Mechling and Gustafson (2009) concluded that VPI provided the teacher the ability to focus on the salient features of a task, reducing the opportunity for a student to attend to non-relevant aspects of a task. They also maintained that the VPI showed tasks in real-time. Mechling and Gustafson (2009) suggested that future research replicate the study with other students with disabilities as well as examine the use of the two interventions (static pictures, VPI) with more complex multiple-step tasks. They recommended that researchers consider the critical features of each prompting method. For example, auditory cues were used with the video, but not with the static pictures in this study.

In a study designed to increase adaptive and self-management skills of students with ID, Payne, Cannella-Malone, Tullis, and Sabielny (2012) investigated self-directed VPI. The purpose of the study was to determine the effectiveness of VPI delivered by an iPod to ascertain if the students would learn to use an iPod Touch to deliver their own prompts.

Two students, ages 18-19, participated in this study. Both students attended an urban school for students with moderate to profound physical, intellectual and developmental disabilities. All sessions were conducted on the school campus.

The VPI was created around the tasks of making popcorn and noodle soup in a microwave oven. The video segments were filmed from a spectator’s point of view. The students were trained to use the iPods to move through the VPI of assigned tasks independently.
Correct use of the microwave was measured by the number of steps of the task completed independently by a student within 15 seconds of the previous step or the initial instruction. If the student made a mistake, an error correction procedure was implemented. To be counted as an error correction, the student had to make the correction within 15 seconds of receiving the prompt. A multiple baseline across participants was used in this study.

Data were collected on the number of correct responses on both tasks (e.g., making popcorn or noodle soup) as well as iPod usage. The percent of correct responses for the tasks were plotted on a line graph. The data were analyzed via visual examination.

The data indicated the potential effectiveness of using an iPod to deliver VPI and self-prompted video to teach the two skills in this study. While one student showed an increasing trend in performing the steps to make popcorn, he never achieved criteria to advance to the next task of making soup. The second student was able to reach criteria for the popcorn task and move on to the soup task. However, the end of the school year prevented the student from reaching criteria.

Payne et al. (2012) concluded that even with the lengthy acquisition rate and the variability of performance, the students were capable of acquiring and maintaining skills using VPI. They suggested that future research examine if students with severe ID and developmental disabilities are able to self-fade prompts. They also recommended continuing research in self-management skills using portable technology.

Video prompting instruction is an effective medium to teach skills to students with ID (Cihak et al., 2006; LeGrice & Blampied, 1994; Mechling & Gustafson, 2009; Payne et al., 2012; Sigafoos et al., 2005). It offers many advantages, including personalizing a task
(e.g., environment, tools, model, audio), providing repeated independent practice, and viewing the video using multiple devices. Video prompting instruction allows for the separation of specific steps to be highlighted as needed, while preparing an individual to generalize new skills to authentic situations.

Teaching Telephone Skills to Students with Disabilities

Communicating with others is a basic human need (Cohan & Metzger, 1998; Deci & Ryan, 1990). Telephone skills are an essential element for communication in today’s society (Blair & Fletcher, 2011; Cleemput, 2011; Pewinternet.org, 2010). These skills are linked to emergency use, access to friends and family, and personal independence (Horner et al., 1987; Lenhart et al., 2010; Taber et al., 2002; Test, Spooner, Keul & Grossi, 1990). Teaching fundamental digital and cell phone skills appears to be an emerging component of a 21st century transition curriculum.

Leff (1974) conducted one of the first studies to teach students with ID telephone usage. The purpose of the study was to determine if students with ID could learn to dial a telephone using the number system with the aid of a specially designed overlay. The study also taught the students to dial a telephone using a color-coded system for each number. One hundred students with ID, ranging in age from 6-21, participated in the study. The students were enrolled in a public school for students with ID.

Two overlays were created to teach the identification of numbers on a desk-top rotary telephone. Overlay A fit around the dialing rotor, with ten numbers correlated to the finger holes. Overlay B fit around the dialing rotor, with ten different colors correlated to the finger holes. A reference slide was created using a strip of paper on which a picture of a
person, their name, and a phone number (in different colors) were displayed. This strip was pulled through a flattened tube of paper that wrapped around the strip with a window cut-out to isolate each number or color on the strip as it passed through. This slide allowed the students to view one number or color at a time to avoid confusion.

Data were analyzed using an ANOVA. Results indicated that the majority of participants with a mean average mental age under 5 years learned to dial the phone using the color overlay. The majority of participants with a mean average age over 5 years learned to dial using the number overlay. Forty-seven participants were successful using the number overlay and forty-four participants were successful with the color overlay.

Leff (1974) concluded that the telephone overlays and slides enabled 91% of the students with ID to learn how to dial a telephone. This skill may be a motivating factor in increasing communication and encouraging functional independence. Leff (1974) had no suggestion for future research.

Risely and Cuvo (1980) taught adults with ID to use the telephone in case of emergency. The purpose of the study was to design and evaluate teaching procedures that focus on emergency telephone usage.

Three adults with mild to moderate ID participated in the study. They all worked in the same workshop for individuals with ID. All sessions were conducted at the workshop.

Modified telephone directories were constructed with three pages in each directory. Each page had a picture of a fireman, a policeman, or a doctor. Eighteen emergency situations were depicted in pictures, six for each emergency category (e.g., kitchen stove on fire, someone physically hurt, people in danger). The adults were to: (a) decide who to call, (b) find the correct emergency number to call in the modified directory, (c) dial the
number, and (d) provide the necessary information to the person on the phone. A multiple baseline across subjects and responses was used for the study.

The dependent variable was the percentage of responses completed correctly and independently. Correct responses were plotted on a line graph. Data were analyzed using visual inspection.

The data indicated that the three participants achieved and maintained 100% accuracy for the mandatory steps needed to complete emergency calls across responses (e.g., police department, fire department, doctor). Risely and Cuvo (1980) concluded that individuals with ID can learn how to dial a telephone, discriminate between stimuli, and provide pertinent information when making an emergency call. Generalization also occurred after the adults successfully completed their first emergency call. This resulted in no training being necessary for two of the three types of emergency phone calls (e.g., police department, fire department, doctor). Risely and Cuvo (1980) offered no suggestions for future research.

Karen, Astin-Smith, and Creasy (1985) designed a study to teach telephone-answering behaviors to individuals with ID. The study taught: (a) calling someone to the phone, (b) referring the caller to an alternate phone number, (c) dealing with a wrong number, and (d) taking a message.

Six individuals with ID participated in the study. Two were adults from a rehabilitation center, ages 30 and 54. Four participants were high school students with ID, ages 17-22, enrolled in a self-contained class. None of the participants had previous experience with answering a telephone.
The students received training in all four categories (e.g., calling someone to the phone, referring the caller to an alternate phone number, dealing with a wrong number, taking a message). Each message-taking skill was broken down into individual steps. The teacher used verbal or visual prompts to guide the students through the steps. The incoming calls were standardized in order to provide the students with the necessary requests and number of calls for the teaching trials. Students were instructed in one category until they achieved criteria (a perfect score with no prompts for five consecutive trials) and then moved to the next skill category.

Scores were averaged and graphed. Data were analyzed using visual inspection. Karen et al. (1985) concluded that the teaching procedures were effective with individuals with mild ID. The students all reached the set criteria for telephone messaging. Karen et al. (1985) had no suggestions for future research.

Horner et al. (1987) designed a study to distinguish if there was a functional relationship between using general case procedures when selecting teaching examples and the development of generalized telephone skills for high school students with moderate to severe ID. The long-term goal was the generalization of telephone skills to non-trained telephone situations in the home, school, and community.

Two boys and two girls with moderate ID, ages 17 to 21, participated in the study. The four students demonstrated basic communication skills and none had used a telephone independently. The teachers in the study were college students majoring in special education or psychology.

The study took place in multiple settings on the high school campus. The generalization settings were the teacher’s lounge and a math office, as well as a grocery
store, a bowling alley, and an apartment. Follow-up data were collected at each student’s home.

The training was conducted using a teletrainer (a device with one push-button phone and one rotary phone with a control box in the middle), two pay phones, and a Trimline style phone. For the generalization probes, a standard business phone, a hand-held rotary phone, and a push-button pay phone were used. In the training sessions, the students worked with the teletrainer to make and receive phone calls until they achieved criteria. The next training sessions alternated between training with the pay phone in the school hallway and training with the teletrainer. The study used a counterbalanced multiple baseline design across behaviors and settings.

Data were collected on the number of correct responses across settings (e.g., teacher’s lounge, math office, grocery store, bowling alley, apartment) for making and receiving phone calls. The percent of correct responses were plotted on a line graph. Data were analyzed using visual inspection.

The data indicated that the four participants achieved criteria. All students reached criteria for receiving phone calls more quickly and with more consistency than for making phone calls. The parents also indicated that their children used the telephone regularly at home 18 months following instruction.

Horner et al. (1987) concluded that general case instruction was responsible for the generalization of skills. They maintained that the counterbalanced multiple baseline, using two skills per student, allowed the students to begin instruction with less delay. Horner et al. (1987) suggested that future research examine the effect of the criteria for training
termination on the generalization of skills performance. They also recommended using a range of stimulus and response variations for generalization of newly acquired skills.

Test et al., (1990) worked with individuals with ID to use a payphone. The purpose of the study was to provide functional training for students with ID to teach a community survival skill (e.g., telephone use) as well as assess the generalization of the skill across settings.

Two students with profound ID participated in the study. The settings for the study were chosen based on the frequency with which the students visited the settings in their neighborhoods (e.g., mall, gas station). One student was taught in a large, indoor shopping mall and the generalization settings were a neighborhood convenience store and a gas station. The second student was taught at a local convenience store with generalization settings at a neighborhood corner store and shopping center. Each student worked with one teacher.

Seventeen steps were identified in the task analysis for making a phone call. A system of least prompts (e.g., independent, verbal, gesture/verbal, and physical/verbal) was used to guide the students through the task for each training trial, followed by verbal praise. A multiple-probe design was used in the study.

The data were collected on the number of steps performed correctly by each student. These data were charted on a line graph. The data were analyzed using a visual inspection.

The data indicated that one student reached criteria (independently performing the task for three consecutive trials) in 45 days. While the second student achieved criteria in
37 days. Both participants were successful in learning to use public phones within their community to call home.

Test et al. (1990) concluded that student success in dialing the telephone was a direct result of the task analysis used in combination with the SLP intervention. They also mention that teaching in real world settings was instrumental to generalization. The lack of a maintenance phase was noted by Test et al. (1990) as a limitation of the study.

Test et al. (1990) suggested that future research on telephone skills focus on number recognition skills. They also recommended considering the generalization of dialing skills in order for untrained dialing sequences to be acquired.

Because community integration and autonomous functioning are important elements of transitioning from school to adult life, Taber, et al. (2002) designed a study to teach students with ID to recognize that they were lost and to use a cell phone to call for assistance. Fourteen students with moderate ID, ages 11-14, participated in the study. The students were placed into three groups based on their school location (e.g., group A, group B, group C). None of the students could operate a cell phone prior to the study.

Instruction was provided across settings in both general and self-contained classrooms. The community settings were selected based on student familiarity with the setting. Several locations were used as real world practice (e.g., grocery store, public library, department store).

Instruction consisted of simulating of being lost in the community (e.g., not being able to see their companion), the use of the cell phone to call for assistance, and providing a description of their surroundings. Practice took place in the school setting using a role-play activity and then used in a community setting. A task analysis was created on operating the
telephones used in the study and the SLP (independent, verbal, gesture/verbal, and guidance/verbal) was used to guide the students through the telephone task. A concurrent multiple-probe design across groups was used in the study.

The data were collected on the number of steps completed correctly by the students (e.g., dialing the cell phone, describing their location). The percent of correct steps were plotted on a line graph. The data were analyzed using visual inspection.

The results indicated that the students did learn to identify when they were lost and call for assistance. Following instruction, student performance ranged from 86% to 100% across all groups. Students in Group A participated in Phase III to determine generalization skills. Groups B and C were excluded from this phase due to time restrictions.

Taber, et al. (2002) concluded that the skill of using a cell phone, when lost, may increase an individual’s independence in the community. Difficulties identified with the use of the cell phone included turning it on, clearing incorrect numbers, and pushing the send button. Identifying landmarks and general surroundings was also a consideration in the study.

Taber, et al. (2002) suggested that future research teach students to use the speed dial function on the cell phone and to select cell phones that are simple and easy to use. They also recommended that research focus on strategies to decrease the risk for victimization for this population.

In an effort to teach students with ID how to react when dangerous situations arise in the community, Taber et al. (2003) conducted a follow-up study based on her research (Taber et al. 2002). The purpose of the follow up study was to determine if students with
Six secondary students with ID, ages 14-18, participated in the study. The students were enrolled in self-contained classes and participated in weekly community-based outings. The baseline, intervention, and generalization phases were conducted in two secondary schools and five community sites in both rural and suburban locations.

A five-level SLP (e.g., independent, verbal, gesture/verbal, model/verbal, physical/verbal) was used in conjunction with task analyzed steps for answering a ringing cell phone, providing information about their location, and using speed dial. The students were divided into two groups based on the abilities they demonstrated in a pre-training phase. Group A consisted of three students who received instruction on answering a cell phone and providing a description of their location. Group B was comprised of three students who were able to identify when they were lost, but had trouble dialing a phone number. This group was taught to use the speed dial function on the cell phone. For the purpose of the study, the definition of lost was defined as not being able to see the person or people the student was within the community setting. A multiple-probe design across students was used in this study.

Data were collected on the number of steps, within each task (e.g., answer a ringing phone, describe the location, use speed dial), completed independently. The percent of steps completed independently were plotted on a line graph. A visual inspection was used to analyze the data.

The data indicated that the task analysis and SLP were effective in teaching students with ID to identify being lost, call for assistance, and describe their surroundings. Students
who could not identify their surroundings were successful in learning to answer their ringing cell phone and give a description of their environment. Students who could not successfully dial a phone number using the cell, phone learned how to use the speed dial feature on the cell phone.

Taber et al. (2003) found that even though students were successful in attaining the targeted skills, difficulties were identified. The ability of the students to describe their surroundings required extra training, often requiring physical modeling to provide more detail.

Taber et al. (2003) suggested that future research consider equipment reliability. For example, the volume of the cell phone being loud enough to be heard when ringing and when speaking to another person. They also recommended that research examine the maintenance of the skills over time.

Manley et al. (2008) investigated teaching cell phone skills to elementary students with ID. The study was based on the importance of maintaining friendships and participating in social interactions. The purpose of this study was to: (a) evaluate the effectiveness of the SLP procedure to teach students to make a phone call, (b) evaluate the effectiveness of an SLP procedure to teach students with intellectual disabilities to leave a recorded message, (c) determine if the skills generalized with the use of a simulation with multiple exemplars, and (d) determine if the skills were maintained over time.

Three students with ID, ages 9-10, participated in the study. All of the students participated in community-based instruction on a regular basis. The setting for the baseline, instruction, and maintenance phases was the special education resource room.
Generalization sessions occurred in the community (e.g., department stores, public library, restaurants, and grocery stores).

Two task analyses were developed for this study, one for a live phone call (12 steps) and one for a recorded phone call (11 steps). A system of least prompts (e.g., verbal, model/verbal, physical/verbal) was used to guide the students through the task at 3-second intervals. Maintenance sessions were conducted across students who had reached criteria. A multiple-probe across subjects design was used for this study.

The data collected were the number of independent steps completed to make a live phone call and leave a recorded message. The percent of independent steps were recorded on a line graph. A visual examination was used to analyze the data.

The data indicated that the three students were successful in reaching 100% criterion for the steps performed independently for live and recorded telephone calls. All students maintained the criteria for making a live call. Two students maintained criteria for leaving a recorded telephone call. The SLP was considered effective, however, the results for generalization and maintenance were mixed. The students performed live phone calls with greater accuracy than the recorded calls.

Manely et al. (2008) concluded that the students were successful in learning how to make a live call and to leave a recorded message. They suggested that it was possible for the students to be more motivated to talk with someone compared to leaving a recorded message. However, the use of multiple examples in the classroom did not include those found in the natural environment (e.g., putting money in public payphones, using a wall mounted model telephone, distractions of a public place).
Manley et al. (2008) suggested that future research focus on the use of cell phones for recreational and social interactions. They also recommended studies that focus on telephone interactions around friendships between students with disabilities and students without disabilities.

Training individuals with ID to use a telephone has been viewed as an important life skill for many years (Horner, Williams, & Stevely, 1987; Leff, 1974; Leff, 1975; Manley, et al., 2008; Risley & Cuvo, 1980; Smith & Meyers, 1979; Taber et al., 2002; Test et al., 1990). Cell phones now offer many applications that incorporate digital skills that generalize to other common applications (e.g., computers, ATMs). Basic digital skills are a necessity in the 21st century.

**Summary**

The literature supports the need for research-based interventions to teach young people with moderate to severe ID skills for employment and everyday life (Cavkaytar, 2012; Colyer & Collins, 1996; Frank et al., 1985; Hammond et al., 2010; Mechling et al., 2008; Taber et al., 2002). Telephone skills for students with ID have been identified as age appropriate and timely (Bryen et al., 2007; Hallgren et al., 2011; Stock et al., 2008; Manley, et al., 2008; Taber et al., 2002). Many methods have been proven to be successful in teaching students with ID these skills. One such method is the use of a task analysis. A task analysis evolves from identifying each step of a task. This allows each step to be practiced individually (Davies et al., 2002). Chaining is an act of teaching multiple-step tasks. When a task is practiced through each step in its entirety, it is known as total task chaining (Spooner et al., 1983). Another method used successfully to teach telephone
phone skills is the SLP, a prompting system that delivers a succession of least intrusive prompts (e.g., verbal, gestural, physical) to guide an individual through a task (Godsey, Schuster, Lingo, Collins, & Kleinert, 2008; Steege, Wacker, & McMahon, 1987; Woolery et al., 1990).

The literature indicates that technology can be integrated into the teaching of students with disabilities (Sigafoos et al., 2005). Research suggests that using technology not only enhances portability (Mechling et al., 2008; Riffel et al., 2005; Taber et al., 2002), but increases motivation (Hammond et al., 2010), and lessens social stigmas that people with ID sense from their peers without disabilities (Jahoda & Markova, 2004). People with ID want to be taught to use and have support for the use of technology (Bryen et al., 2007). They consider this an aspect of quality of life in that technology skills can enhance social inclusion and personal development (Hallgren et al., 2011; Stock et al., 2008).

This study was designed to teach students with moderate ID cell phone skills using VPI. The VPI taught the students how to turn on a cell phone, scroll for a phone number or contact, initiate a phone call, talk with the person called, and end the call. Based on the literature regarding research-based teaching methodologies, this study incorporated the use of a task analysis, forward chaining, and the SLP to teach four students with moderate ID, ages 18-22, cell phone skills.
CHAPTER THREE

METHODOLOGY

Cell phones are used to communicate in a variety of manners (e.g., verbal, text, video). For adolescents, cell phones serve as a facilitator of autonomous growth, a tool for self expression, and a source of individuality as they transition into adulthood (Blair, & Fletcher, 2011; Cleemput, 2011). People with intellectual disabilities (ID) want support to learn to use a cell phone, similar to their peers without disabilities (Branzberg, 2007; Hallgren et al., 2011; Lachapelle et al., 2005; Manley et al., 2008). As students with ID prepare for transition to adulthood, they require specific instruction and support to make a phone call using a cell phone and respond appropriately (Hallgren et al., 2011; Taber et al., 2002; Taber et al, 2003).

This study examined the effectiveness of video prompting instruction (VPI) to teach the use of a cell phone to postsecondary students with moderate ID. The students were taught to turn on a cell phone and complete a call. A 16-step task analysis of making a cell phone call was taught using the VPI paired with the system of least prompts (SLP) and total task chaining to implement the intervention (see Appendix A). The students were videotaped during instruction for instructional reliability and teacher fidelity. Data were compared for the level of prompts required during instruction and maintenance of the skills.
Research Questions

Specifically, this study asked the following questions:

**Research Question 1:** Does video prompting instruction paired with a SLP increase the ability of students with moderate ID to use a cell phone?

It was predicted that there would be an increase in the number of steps completed independently on the task analysis using video prompting instruction with a SLP when teaching students with moderate ID to use a cell phone.

**Research Question 2:** Will the level of SLP used to guide students with moderate ID to use the cell phone decrease with repeated use of the video prompt instruction?

It was predicted that the level of SLP used to guide the students with moderate ID to use the cell phone would decrease with repeated use of the video prompt instruction.

**Research Question 3:** Will students with moderate ID be able to maintain the cell phone skills learned using the video prompting instruction?

It was predicted that cell phone skills learned through video prompting instruction would be maintained by students with moderate ID.

Participants

The participants for this study were four young adults enrolled in a public school district transition program for students with intellectual disabilities. Each student had an Individualized Education Program (IEP) with goals designed to increase social, vocational, and daily life skills. A letter was sent home to the parents of students being considered for the study (see Appendix B). However, participation in the study was dependent on a signed
informed consent form from the parent and a signed assent form from each student (see Appendix C and Appendix D).

**Students**

For the purpose of this study, students are represented as Carlos, Eddie, John, and Andre. In order to participate in the study, students met the following criteria: (a) ranged in age from 18-21 years old, (b) were eligible for special education services with an eligibility diagnosis of moderate to severe ID, (c) were enrolled in a self-contained high school transition program, (d) were able to hold a cell phone, (e) were able to push buttons on the cell phone, and (f) were able to speak into the cell phone (see Table 1).

<table>
<thead>
<tr>
<th>Student</th>
<th>Carlos</th>
<th>Eddie</th>
<th>John</th>
<th>Andre</th>
</tr>
</thead>
<tbody>
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<td>Gender</td>
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<tr>
<td>Disability</td>
<td>ID</td>
<td>ID</td>
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</table>

*Note.* The assessment used to determine Intellectual Disability: <sup>a</sup> Reynolds Intelligent Assessment Scales (RIAS) (Reynolds & Kamphaus, 1998), <sup>b</sup> Stanford-Binet Intelligent Scale (Thorndike, Hagen, & Sattler, 1986), <sup>c</sup> Kaufman Assessment Battery (Kaufman & Kaufman, 1983), <sup>d</sup> no eligibility intelligence test results available.

*Note.* H = Hispanic; C = Caucasian.
Teacher

One teacher participated in this study. The teacher was certified to teach students with ID in a self-contained postsecondary setting and held a Master’s Degree in Special Education. The teacher had taught students with ID for eight years and had experience in transition, instruction, prompting, and assessment of students with ID.

Teacher Fidelity Observer

The daily instruction was videotaped and reviewed to ensure teacher fidelity. The teacher fidelity observer reviewed the videos of the teacher conducting the pre-training trials and daily VPI instruction and completed the corresponding checklists (see Appendix E and Appendix F). Feedback was provided to the teacher when fidelity fell below 100%. The fidelity observer attended a one-hour training session in the classroom to become familiar with the pre-training scripts and the VPI teacher scripts, (see Appendix G and Appendix H) and practice filling out the pre training teacher fidelity checklist (see Appendix E) and the VPI teacher fidelity checklist (see Appendix F) with the teacher. Teacher fidelity were determined using the following formula \[ \frac{\text{instruction components implemented appropriately}}{\text{instruction components implemented appropriately} + \text{instruction components implemented inappropriately}} \times 100 = \text{percent of teacher fidelity} \].

Interobserver

Reliability checks for the level of the prompts used in the daily trials were recorded using the data collection sheet (see Appendix I). The interobserver reviewed 45% of the video-taped sessions to score the intrusiveness of the SLP (e.g., verbal, gesture/verbal, physical/verbal, incorrect/no response) necessary to complete the task. The observer attended a one-hour training in the classroom to learn the materials, procedures of the
study, and practice filling out the data collection sheet (see Appendix I). Interobserver agreement was based on the following formula: \( \frac{(\text{prompt agreements})}{(\text{prompt agreements} + \text{prompt disagreements})} \times 100 = \text{percent of prompt agreement} \). Interobserver agreement will be set at 100%.

**Setting**

This study was conducted in a classroom of a high school located in a large southwestern school district in the United States. The school district encompasses both rural and urban communities and serves a large diverse population across economic groups. The high school was a career and technical magnet school. It was comprised of grades 9-12 in a general education setting as well as postsecondary programs for students with disabilities. The principal provided access permission (see Appendix J).

The students were enrolled in a postsecondary transition program for students with moderate to severe ID located on a high school campus. The postsecondary program focuses on daily life and vocational skills with frequent community-based instruction. The classroom in which the study was conducted incorporated the use of centers for students to practice skills needed in day-to-day living (e.g., cooking, setting a table, laundry), vocational skills, and social skills. Tables and chairs were arranged for these centers as well as group instruction. One corner of the room emulated independent living conditions and contained a twin bed, mini refrigerator, microwave, and dishes. The program was taught by a licensed special education teacher and one paraprofessional.
**Instrumentation**

For the purpose of this study, an instrument was created. A *Data Collection Sheet* (see Appendix I) was used to assess the number of steps of the 16-step task analysis completed independently by a student. This protocol was used for both baseline and the VPI.

**Data Collection Sheet**

The *Data Collection Sheet* (see Appendix I) was used to collect the number of steps in the task analysis completed independently as well as the intrusiveness of the prompts (e.g., verbal, gestural/verbal, physical/verbal incorrect/no response) used during each lesson. The *Data Collection Sheet* listed each step of the task analysis with columns to the right to list the type of response to each step: (a) plus (+) for a correct response, (b) v for verbal prompt, (c) gv for gestural/verbal prompt, (d) pv for physical/verbal prompt, and (e) minus (-) for incorrect/no response. Data were plotted on a line graph (see Figure 1). The SLP was used to guide the student through each step to allow the student to experience success as they completed the total task.

**Materials**

The following materials were used in this study: (a) cell phones, (b) the VPI, (c) a laptop, (d) the task analysis, (e) a pre-training Power Point, and (f) a video camera. The cell phones were provided to the students. The video camera was provided by the school.

**Pay As You Go Cell Phones**

The cell phone used in this study was an AT&T pay as you go Samsung SGH-a157 V Go Phone. This flip-style phone was chosen for its easy to read keypad, large buttons,
and low cost. The phones were activated and numbered so that each student used the same cell phone every day of the study. Four contact phone numbers were entered into each phone (e.g., dad, friend, mom, teacher). This was decided individually for each student. The phones were activated with a pre-pay plan for the duration of the study. Each phone came with a charging cable.

**Video Prompting Instruction**

The VPI was recorded from a first-person perspective using the Go Phone used by the students as suggested by Mechling and Gustafson (2009) (see Appendix K). The video included auditory directions for each step. The model in the VPI was a peer without disabilities and provided a signed model release form (see Appendix L). The video was segmented into the 16-steps of the task analysis. These segments were embedded in a Power Point consisting of 16 slides aligned with the task analysis. The same recorded auditory directions were printed on each slide. Students put the cursor on the slide and clicked the mouse to play the video. The teacher would then ask the student to perform the step, “like the person in the video.” The student would then click on the right arrow button on the laptop to proceed to the next slide.

**Laptop**

The video prompts were viewed via a Power Point using a HP Compact laptop computer. The operating system was Windows Vista. The laptop was locked in the classroom for the duration of the study.

**Task Analysis**

A 16-step task analysis (see Appendix A) was developed using the Go Phone (Manley et al. 2008; Taber et al., 2002). Six competencies were identified as necessary to
complete the call: (a) turn on phone, (b) select menu (c) scroll for contact, (d) make the
call, (e) talk with person called, and (f) end the call. Each action, needed to complete these
competencies, was identified as one step and included in the task analysis. The task
analysis was used to design the VPI (see Appendix K) and data collection sheet (see
Appendix I).

**Pre-Training Power Point**

A Power Point using embedded video was used for the pre-training phase (see
Appendix M). The video segments used for the pre-training Power Point were comprised of
familiar staff members saying hello to the students in the study. This was done to add
elements of familiarization and motivation. The purpose of the pre-training Power Point
was to familiarize the students with the using the mouse to click on the Power Point slide to
play the video and then click the right arrow button to move to the next slide. These were
the same computer skills needed for the intervention. All models in the video segments
signed a release form (see Appendix L).

**Video Camera**

A Sony Cyber-shot digital camera was used to film the instructional periods of the
study. The video was set up in the classroom by the teacher. The camera was the property
of the school.

**Experimental Design**

A multiple-probe across subjects design (Horner & Baer, 1978) was used to
determine the effectiveness of VPI to teach students with intellectual disabilities the 16-
step task analysis to make a cell phone. The study consisted of four phases: (a) pre-training,
(b) baseline, (c) intervention, and (d) maintenance. The teacher provided the VPI paired with the SLP and total task chaining to guide the students through the VPI sessions. The dependent variable was the number of steps of the task analysis presented in the VPI that the student completed independently to make a cell phone call. Data were collected twice a day, every day of the school week until criteria was met. Criteria were set at a student independently completing 12 out of the 16-step task analysis for two consecutive sessions. Once the first student reached criteria, the next student established a stable baseline followed by intervention. As a student achieved criteria, those receiving intervention previously were probed for maintenance of the skills and the students awaiting intervention participated in another baseline probe to check for diffusion of treatment (see Figure 1).

**Procedures**

The study was organized by pre-training, baseline, intervention, and maintenance. The pre-intervention phase consisted of obtaining: (a) administrative approval, (b) parental letter/consent (c) student assent, and (d) pre-training students to use the laptop. Following the pre-intervention phase, all students participated in a baseline probe. Carlos continued baseline probes until a stable baseline was established. Carlos then began the VPI. Once Carlos achieved criteria, Eddie, John, and Andre participated in a baseline probe to check for diffusion of treatment. Baseline probes for Eddie continued until a stable baseline was established. Then Eddie received the VPI. As Eddie achieved criteria, John and Andre participated in a baseline probe to check for diffusion of treatment, however Carlos had reached maximum age and was no longer in the postsecondary program. Therefore, he was unable to participate in a maintenance probe. John continued baseline probes to establish a
stable baseline and then entered the VPI. Once John achieved criteria, Eddie participated in a maintenance probe. Andre continued baseline probes until a stable baseline was established, followed by intervention. Upon Andre ending intervention, Eddie and John participated in a maintenance probe (see Figure 1).

**Phase One Pre- Intervention**

Phase One was comprised of preparatory tasks. Training the teacher fidelity observer and training the interobserver were completed. Administrative approval, consent and assent forms were distributed and collected. Student pre-training on the use of video prompting instruction also was a part of this phase.

**Train teacher fidelity observer.** A graduate assistant served as the teacher fidelity observer. The fidelity observer attended a one-hour training session in the classroom to become familiar with the materials. The teacher provided verbal examples using the teacher script for pre training (see Appendix G) and the teacher script for the VPI (see Appendix H) both with and without errors. The graduate assistant and teacher practiced recording the results of the teacher’s delivery of instruction using the pre-training teacher fidelity checklist (see Appendix E) and the VPI teacher checklist (see Appendix F) until there was 100% agreement on two consecutive trials. Teacher fidelity was determined using the following formula \[ \text{percent of teacher fidelity} = \left( \frac{\text{instruction components implemented appropriately}}{\text{instruction components implemented appropriately} + \text{instruction components implemented inappropriately}} \right) \times 100 \].

**Train interobserver.** Reliability checks for the level of the prompts used in the daily sessions were recorded by a graduate assistant using the date collection sheet (see Appendix I). The interobserver reviewed 45% of the video-taped sessions to score the
intrusiveness of prompts (e.g., no response, verbal, gesture/verbal, physical/verbal)
necessary to complete the task. The observer attended a one-hour training in the classroom
to learn the materials and procedures of the study. The interobserver and the teacher role
played using the VPI. The interobserver played both the student and the teacher at different
times as they covered the various prompts that would be used and practiced recording the
prompts on the data collection sheet (see Appendix I). They practiced until there was 100%
agreement between the teacher and the graduate assistant on two consecutive trials.
Interobserver agreement was based on the following formula: \[
\frac{\text{prompt agreements}}{\text{prompt agreements} + \text{prompt disagreements}} \times 100 = \text{percent of prompt agreement}\].
Interobserver agreement was set at 100%.

**Research approval and consent.** A letter of access from the participating school
principal was obtained (see Appendix J). The parent letter, informed consents, and student
assent forms were sent home to parents in a manila 9 x 11 envelope. The student assent
form was sent home for the parents to review with their child (see Appendix B, Appendix
C, and Appendix D). The signed consent and assent forms were collected prior to the study.

**Pre-training.** Prior to baseline, each student was trained individually to use the
laptop and Power Point. The teacher began by turning on the camera to record the training
session. The teacher used a pre-training script (see Appendix G) to instruct each student on
the use of the laptop to advance the Power Point and play the videos. A Power Point with
an embedded video on each slide was used to train the participants to use the mouse to
click on the Power Point slide, watch the video, and click on the right arrow to advance to
the next screen. The teacher prompted the student verbally, with a gesture, or physical
(hand over hand) as needed.
The teacher sat next to the student and set up the practice video. The teacher told the student that it was time to review the Power Point slides and began the first video by clicking on the slide. The teacher waited 5 seconds for a response. If there was no response, the teacher pointed to the picture and told the student to click on the picture. If there was no response following a 5-second wait period, the teacher used a physical prompt to aid the student to position the mouse on the picture and/or click on the video to play it. When the video segment was over, the teacher told the student that it was time to change slides and the process was repeated from slide-to-slide until the end. If the student made an incorrect choice, the teacher advised the student to try again and guided the student through the process of playing the video and changing slides. Criteria were set at 100% accuracy for playing the video and forwarding the slides for two consecutive sessions.

**Phase Two Baseline**

The first probe condition was baseline and evaluated the number of steps each student performed to complete a telephone call using the cell phone, without the video prompts. The teacher put the cell phone on the table in front of the student and instructed the student to turn on the phone, find their friend’s phone number, make a phone call, talk to their friend, and end the call. A correct response was recorded with a plus sign (+) for any of the task analysis steps completed independently on the *Data Collection Sheet* (see Appendix I). An incorrect/no response was recorded with a minus sign (-) for steps of the task analysis not completed. There was no prompting during the baseline probes. A baseline for each student was conducted, with Carlos continuing for a minimum of three sessions or until a stable baseline with no trend was established. Upon establishing a stable
baseline, Carlos began intervention. Those students who had not received the VPI were probed as the previous student reached criteria to check for any diffusion of treatment.

**Phase Three Intervention**

Carlos and the teacher sat at a table with the laptop and a Go Phone designated to be used only by Carlos. This allowed for the personalization of the phone numbers stored in the address book, including the number of the classroom friend the student selected to call. Sessions were conducted twice a day, each school day, until the student achieved the criteria of 12 out of 16 steps independently of the 16-step task analysis for two consecutive sessions. The criteria was set at 12 out of 16 steps because the steps 1-12 are task based (i.e., operating the cell phone) while the remaining four steps are based in social skills (i.e., conversation).

To begin instruction, the teacher activated the VPI. Sitting next to the student, the teacher followed the VPI teacher script (see Appendix H) and said, “*We are going to practice how to use your phone by looking at some video. After you watch the video, you do the same thing with your phone as the person in the video. Do you remember how to start the video?*” If the student said, “*No,*” the teacher said, “*Use the mouse to click on the picture (point to the picture) and watch the video.*” If the student said, “*Yes,*” the teacher said, “*Let’s begin,*” started the first video prompt, and waited 5 seconds for the student to respond. A correct response was recorded with a plus (+) for any video prompt completed independently within the 5 seconds. Once a step was completed, the student progressed to the next video prompt. If there was no response or an incorrect response, the teacher used a verbal prompt (v) (and waited 5 seconds). If there was no response or an incorrect response, the teacher used a gesture/verbal prompt (gv) (e.g. “*Pick up the phone like the*
and pointed to the phone). If there was no response or an incorrect response, the teacher used a physical/verbal prompt (pv) (e.g. “Pick up the phone like the person in the video” and guided the student’s hand to pick up the phone) to guide him to the next task. All responses and prompts were recorded on the Data Collection Sheet (see Appendix I).

Criteria were set at 12 of 16 of the steps being performed correctly, not necessarily in sequential order. In steps 13-15, the student was given an example of a conversation starter and salutations (e.g., “Hey, what’s up?”, or “OK, see you later”). When Carlos achieved a criteria of 12 out of 16 steps for two consecutive sessions, Eddie established a stable baseline (minimum of three data points) followed by intervention. When Eddie achieved criteria, John established a stable baseline followed by intervention. This pattern continued until Andre moved into intervention.

Phase Four Maintenance

Phase Four was based on baseline probes to check for maintenance. As each student achieved criteria, the student(s) who had reached criteria previously participated in a maintenance probe. Carlos did not participate in a maintenance probe because he reached maximum age after achieving criteria and was no longer attending school.

Reliability Measures

Measures were taken to ensure the reliability of the study. A graduate assistant was the interobserver. The interobserver checked for internal validity and reliability.
Teacher Fidelity

Internal validity was evaluated using the pre-training teacher fidelity checklist (see Appendix E) and the VPI teacher fidelity checklist (see Appendix F) to assess teacher adherence to the pre-training and VPI scripts. Teacher fidelity data were collected on all sessions and reviewed daily. Fidelity data were recorded for teacher behaviors during the study, including: (a) turning on the laptop and moving to the first slide of the Power Point, (b) prompting the student to begin, (c) adhering to the VPI, (d) recording prompts, and (e) delivering of positive reinforcement. Teacher fidelity was determined using the following formula: \[
\text{Teacher Fidelity} \times 100 = \frac{\text{instruction components implemented appropriately}}{\text{instruction components implemented appropriately} + \text{instruction components implemented inappropriately}} \times 100
\]

Interobserver

Reliability checks for the completion of the task analysis and level of the prompts used to guide the students through the 16-step task analysis were collected. The interobserver reviewed 45% of the video-taped sessions and recorded the level of prompts used to advance the student through the VPI. The interobserver attended a training session to learn the materials and procedures of the study. Inteobserver agreement was based on the following formula: \[
\text{Percent of Prompt Agreement} \times 100 = \frac{\text{prompt agreements}}{\text{prompt agreements} + \text{prompt disagreements}}
\]

Treatment of Data

A visual analysis was used to evaluate the effectiveness of the intervention (see Figure 1). Data were analyzed to address the following questions:
Research Question 1: Does video prompting instruction paired with an SLP increase student’s with moderate ID ability to use a cell phone?

Analysis: A visual inspection and comparison of the means was used to determine if there was a functional relationship between video prompting instruction and teaching students with moderate ID how to use a cell phone.

Research Question 2: Will the level of prompts used to guide students with moderate ID to use the cell phone decrease with repeated use of the video prompts?

Analysis: A visual inspection and comparison of the means was used to determine if the level of prompts decreased with the repeated use of the video prompting instruction.

Research Question 3: Will students with moderate ID be able to maintain the cell phone skills learned using the video prompting instruction?

Analysis: A visual inspection and comparison of the means was used to determine if the skills learned using the video prompting instruction were maintained by students with moderate ID.
CHAPTER FOUR

RESULTS

The cell phone is the predominant tool for communication in this digital world and knowing how to use it is considered a basic digital skill (Blair & Fletcher, 2011; Lenhart et al., 2010). For adolescents, the cell phone represents self-expression and status as well as plays a role in the sense of developing their independence (Lenhart et al., 2010). Cell phones also increase the ability for peer-based interactions (Cohen & Metzger, 1998). These factors have been identified as important to a successful transition from school to work for students with intellectual disabilities (ID) (Kellem & Morningstar, 2010; Kim & Turnbull, 2004). People with ID want access to digital phone technology, but often lack instruction and support (Bryen, Carey, & Friedman, 2007; Hallgren et al., 2011; Stock et al., 2008). Therefore, instruction in the use of a cell phone is timely (Manley et al., 2008).

Research supports the use of video prompting instruction (VPI) as an instructional method for students with ID (Cihak et al., 2006; LeGrice & Blampied, 1994; Mechling & Gustafson, 2009; Payne et al., 2012). However, no published research has been found that uses VPI to teach cell phone skills to students with ID. For this study instructional materials were developed, evaluated by experts and a student with ID (not involved in the study), and revised based on their feedback prior to the study.

The purpose of this study was to evaluate the effectiveness of VPI to teach students with ID to use a cell phone and to make a phone call. The following skills were taught as constructs of the 16-step task analysis: (a) turn on a cell phone, (b) scroll for a contact, (c) initiate the phone call, (d) speak to the person called, and (e) end the call. The study also measured the level of the system of least prompts (SLP), (recorded as verbal,
gesture/verbal, physical/verbal, incorrect/no response) necessary for the student to complete the task (Mechling & Gast, 1997). This population was selected because the literature supports the desire for individuals with ID to have access to current digital technology (Bryen et al., 2007; Hallgren et al., 2011; Stock et al., 2008). The setting for this study was a classroom in a high school located in a large southwestern school district in the United States. A multiple probe across subjects design was used for the study.

**Participants**

**Students**

Four males with moderate ID who ranged in age from 19-21 years old participated in the study. The students were enrolled in a self-contained, postsecondary classroom for students with ID. All the students were eligible for special education services as students with intellectual disabilities under the Nevada Administrative Code (NAC, 2011) (see Table 1).

**Teacher**

Instruction was provided by a licensed special education teacher. The teacher had a Master’s Degree in Special Education, certification to teach students with ID, and had been teaching students with ID for eight years. The teacher had experience in instruction, prompting, transition, and assessment of students with ID.

**Research Questions**

Three research questions were used to evaluate VPI as an instructional method for teaching students with ID to use a cell phone. The research questions included: (a) the
effectiveness of video prompting instruction to teach the steps necessary to make a call, (b) the need for less intrusive prompts as the instruction progressed, and (c) the maintenance of the skills learned with VPI.

**Question One**

Does video prompting instruction paired with a SLP increase the ability of students with moderate ID to use a cell phone? The first research question addressed the effects of VPI paired with the SLP for increasing the ability of students with moderate ID to use a cell phone. It was predicted that there would be an increase in the number of steps completed independently on the task analysis when video prompting instruction was used with the SLP. The data suggested that three of the four students (i.e., Carlos, Eddie, John) increased the number of steps completed independently to use the cell phone and achieved the criteria of 12 out of 16 steps completed independently for two consecutive sessions using the VPI.

**Carlos.** Carlos received three baseline probes prior to instruction to establish a stable baseline with zero trend of the number of steps completed correctly ($M = 3.33$, range 3-4). The VPI data for Carlos showed a gradual progression of accelerating trend ($M = 9.73$, range 7-12). Carlos achieved criteria of 12 out of 16 steps completed independently two sessions in a row, in 15 sessions. Upon achieving criteria, a return-to-baseline probe was conducted to compare his ability to use the cell phone without the VPI, as in baseline. This resulted in a score of nine steps being completed independently, indicating that Carlos was able to complete more steps independently without the VPI than in baseline.

**Eddie.** Eddie received one baseline probe at the beginning of the study, one
baseline probe following Carlos reaching criteria, and four baseline probes just prior to intervention for a total of six baseline probes. A visual inspection of Eddie’s baseline data showed a stable baseline with zero trend of the number of steps completed independently ($M = 5.17$, range 4-6). Eddie’s VPI data showed a gradual progression of an accelerating trend ($M = 9.25$, range 7-12). Eddie achieved criteria of 12 out of 16 steps completed independently two sessions in a row in 32 sessions. Upon achieving criteria, a return-to-baseline probe was conducted to compare Eddie’s ability to use the cell phone without the VPI, as in the baseline probes prior to instruction. This resulted in a score of five which was consistent with his baseline.

**John.** John received one baseline probe at the beginning of the study, once Eddie met criteria, John began intervention. A visual inspection of baseline data for John showed a peak (12 steps completed independently) in the second baseline probe. This leveled out to a stable baseline with the number of steps completed independently prior to the VPI ($M = 6$, range 5-12). John’s VPI data showed an immediate acceleration with the introduction of the VPI ($M = 13$, range 12-14). He achieved criteria with 12 out of 16 steps and 14 out of 16 steps completed independently in two consecutive sessions. Upon achieving criteria, a return-to-baseline probe was conducted to compare John’s ability to use the cell phone without the VPI. This resulted in a score of 10 steps being completed independently, indicating that John was able to complete independently more steps without the VPI than before the VPI was introduced.

**Andre.** Andre received one baseline probe at the beginning of the study, once John reached criteria, Andre began instruction. A visual inspection showed a stable baseline with zero trend of the number of steps completed independently ($M = 3.67$, range 3-5) Andre’s
VPI data indicated no trend throughout the VPI ($M = 5.10$, range 3-8). Andre participated in 29 sessions, however he did not reach criteria and he did not participate in a return to baseline probe.

**Question Two**

Will the level of SLP used to guide students with moderate ID to use the cell phone decrease with repeated use of the video prompt instruction?

The second research question focused on the level of the SLP (verbal, gestural/verbal, physical/verbal, incorrect/no response) used to guide the students to use the cell phone. It was predicted that the level of the SLP used to guide the students with ID to use the cell phone would decrease with the repeated use of the VPI. The data indicated that for 3 of 4 students (Carlos, Eddie, John) the SLP decreased as they advanced through the VPI. The SLP were recorded for each sessions as follows: (a) verbal prompt (v), (b) gestural/verbal prompt (gv), (c) physical/verbal prompt (pv), and (d) incorrect/no response (-) (see Appendix N).

**Carlos.** Carlos participated in a total of 15 sessions and demonstrated a deceleration in the level of prompts as he progressed through the VPI (see Figure 1). For a summary of the following data see Appendix N. Carlos began with a total of 8 prompts (gv = 2, pv = 6) on the task analysis using the VPI. Session two required a total of 7 prompts (v = 3, gv = 1, pv = 2, - = 1). Session three required a total of 7 prompts (gv = 2, pv = 5). Session four required a total of 7 prompts (v = 2, gv = 3, pv = 2). Session five required a total of 8 prompts (v = 1, gv = 5, pv = 2). Session six required a total of 7 prompts (v = 1, gv = 5, pv = 1). Session seven required a total of 6 prompts (gv = 4, pv = 2). Session eight required a total of 6 prompts (v = 2, gv = 3, pv = 1). Session nine required a total of 7 prompts (v = 1,
Eddie. Eddie participated in a total of 32 sessions and demonstrated a deceleration in the level of prompts as he progressed through the VPI (see Figure 1). For a summary of the following data see Appendix N. He began with a total of 9 prompts (gv = 4, pv = 2, - = 3) to complete the task analysis using the VPI. Session two required a total of 9 prompts (gv = 6, pv = 2, - = 1). Session three required a total of 8 prompts (v = 1, gv = 5, pv = 1, - = 1). Session four required a total of 7 prompts (v = 2, gv = 2, pv = 2, - = 1). Session five required a total of 7 prompts (v = 1, gv = 5, pv = 1). Session six required a total of 8 prompts (gv = 7, - = 1). Session seven required a total of 8 prompts (gv = 6, pv = 1, - = 1). Session eight required a total of 6 prompts (gv = 6). Session nine required a total of 6 prompts (v = 1, gv = 5). Session ten required a total of 8 prompts (gv = 6, pv = 1, - = 1). Session 11 required a total of 5 prompts (v = 1, gv = 4). Session 12 required a total of 6 prompts (gv = 5, - = 1). Session 13 required a total of 8 prompts (v = 1, gv = 5, pv 1, - = 1). Session 14 required a total of 5 prompts (gv = 3, pv = 2). Session 15 required a total of 6 prompts (v = 1, gv = 3, - = 2). Session 16 required a total of 6 prompts (v = 3, gv = 3). Session 17 required a total of 5 prompts (gv = 5). Session 18 required a total of 7 prompts (v = 2, gv = 4, - = 1). Session 19 required a total of 6 prompts (v = 1, gv = 4, - = 1). Session 20 required a total of 6 prompts (v = 1, gv = 5). Session 21 required a total of 6 prompts (v = 1, gv = 5). Session 22 required a total of 6 prompts (gv = 5, - = 1). Session 23 required a
total of 5 prompts (v = 1, gv = 4). Session 24 required a total of 6 prompts (v = 3, gv = 2, - = 1). Session 25 required a total of 8 prompts (gv = 7, - = 1). Session 26 required a total of 4 prompts (gv = 4). Session 27 required a total of 6 prompts (v = 2, gv = 4). Session 28 required a total of 7 prompts (v = 1, gv = 6). Session 29 required a total of 5 prompts (v = 2, gv = 3). Session 30 required a total of 6 prompts (gv = 6). Session 31 required a total of 4 prompts (v = 1, gv = 3). Session 32 required a total of 4 prompts (v = 1, gv = 3).

John. John demonstrated an immediate deceleration in the level of prompts when using the VPI. His first session required a total of 4 prompts (v = 2, gv = 2) to complete the task analysis (see Figure 1). Session two required a total of 2 prompts (v = 2). For a summary of this data see Appendix N.

Andre. Andre demonstrated no trend in the level of prompts required throughout the VPI. Andre began with a total of 10 prompts (v = 1, gv = 4, pv = 4, - = 1) to complete the task analysis when the VPI was used (see Figure 1). For a summary of the following data see Appendix N. Session two required a total of 10 prompts (v = 1, gv = 3, pv = 6). Session three required a total of 8 prompts (v = 1, gv = 1, pv = 6). Session four required a total of 7 prompts (gv = 5, pv = 2). Session five required a total of 13 prompts (v = 2, gv = 4, pv = 2, - = 5). Session six required a total of 9 prompts (pv = 6, - = 3). Session seven required a total of 9 prompts (v = 2, gv = 4, pv = 2, - = 1). Session eight required a total of 11 prompts (gv = 3, pv = 4, - = 4). Session nine required a total of 10 prompts (v = 1, gv = 4, pv = 3, - = 2). Session ten required a total of 12 prompts (v = 1, gv = 2, pv = 8, - = 1). Session 11 required a total of 9 prompts (v = 1, gv = 4, pv = 4). Session 12 required a total of 13 prompts (v = 1, gv = 4, pv = 4, - = 4). Session 13 required a total of 12 prompts (v =
1, \(gv = 3, pv = 6, - = 2\)). Session 14 required a total of 10 prompts (\(v = 1, gv = 3, pv = 4, - = \ldots\)). Session 15 required a total of 13 prompts (\(v = 1, gv = 2, pv = 4, - = 6\)). Session 16 required a total of 11 prompts (\(v = 1, gv = 5, pv = 1, - = 2\)). Session 17 required a total of 8 prompts (\(v = 1, gv = 2, pv = 3, - = 2\)). Session 18 required a total of 12 prompts (\(v = 1, gv = 1, pv = 5, - = 5\)). Session 19 required a total of 11 prompts (\(gv = 2, pv = 5, - = 4\)). Session 20 required a total of 12 prompts (\(v = 1, gv = 4, pv = 4, - = 3\)). Session 21 required a total of 10 prompts (\(gv = 2, pv = 7, - = 1\)). Session 22 required a total of 11 prompts (\(gv = 3, pv = 5, - = 3\)). Session 23 required a total of 11 prompts (\(v = 1, gv = 4, pv = 4, - = 2\)). Session 24 required a total of 11 prompts (\(gv = 3, pv = 4, - = 4\)). Session 25 required a total of 11 prompts (\(v = 1, gv = 3, pv = 5, - = 2\)). Session 26 required a total of 10 prompts (\(v = 1, gv = 3, pv = 4, - = 2\)). Session 27 required a total of 10 prompts (\(v = 1, gv = 6, pv = 2, - = 1\)). Session 28 required a total of 9 prompts (\(gv = 3, pv = 5, - = 1\)). Session 29 required a total of 11 prompts (\(gv = 5, pv = 3, - = 3\)). Andre participated in a total of 29 sessions however he did not reach criteria due to the end of the school year. The number of prompts, as compared to the level of prompts, needed for students surrounding questions seven through ten remained consistently high throughout the study for all students (see Appendix O).

**Question Three**

Will students with moderate ID be able to maintain the cell phone skills learned using the video prompting instruction? The third question in this study involved the ability of students with ID to maintain the cell phone skills learned using the VPI. It was predicted that the cell phone skills learned through video prompting instruction would be maintained by the students. For baseline, video prompting instruction and maintenance data see Table 2.
Carlos reached maximum age and was not available. No maintenance information was collected. Eddie participated in a maintenance probe at one week (7 steps completed independently) following reaching criteria of 12 out of 16 steps completed independently for two consecutive sessions, and another probe at six weeks (6 steps completed independently) after achieving criteria ($M = 6.5$, range 6-7) as compared to baseline ($M = 5.17$, range 4-6). The results suggested that some of the skills learned with the VPI were maintained in the absence of the VPI. John participated in one maintenance probe six weeks after achieving criteria ($M = 8$), as compared to baseline ($M = 6$, range 5-12). The results indicated that some of the skills learned with the VPI were maintained in the absence of the VPI. Andre did not participate in a maintenance probe because he never achieved criteria before school was over for the year.

Table 2

*Video Prompting Instruction Measures*

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline Mean</th>
<th>Baseline Range</th>
<th>Steps Completed Independently with Video prompting instruction Mean</th>
<th>Steps Completed Independently with Video prompting instruction Range</th>
<th>Maintenance Mean</th>
<th>Maintenance Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlos</td>
<td>3.33</td>
<td>3-4</td>
<td>9.73</td>
<td>7-12</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Eddie</td>
<td>5.17</td>
<td>4-6</td>
<td>9.25</td>
<td>7-12</td>
<td>6.5</td>
<td>6-7</td>
</tr>
<tr>
<td>John</td>
<td>6</td>
<td>5-12</td>
<td>13</td>
<td>12-14</td>
<td>8</td>
<td>N/A</td>
</tr>
<tr>
<td>Andre</td>
<td>3.67</td>
<td>3-5</td>
<td>5.10</td>
<td>3-8</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Interobserver Reliability the System of Least Prompts

A graduate assistant was trained as the interobserver for this study. The teacher and graduate assistant participated in a one-hour training to learn the materials and procedures of the study. The graduate assistant and the teacher role-played using the VPI. With the interobserver playing the student and with interobserver playing the teacher they covered the various prompts that would be used and practiced recording the prompts on the data collection sheet (see Appendix I). They practiced until there was 100% agreement between the teacher and the graduate assistant for two consecutive trials.

Interobserver reliability checks were completed for baseline, the VPI and maintenance. Interobserver agreement was based on the following formula: \[\frac{(\text{prompt agreements})}{(\text{prompt agreements} + \text{prompt disagreements})} \times 100 = \text{percent of prompt agreement}\]. The interobserver reviewed 69% (i.e., 18 out of 27) of the baseline probes with an agreement of 97.6%. The interobserver reviewed 45% (i.e., 31 out of 78 sessions) of the VPI videos with an agreement of 89.4%. The interobserver reviewed 33% (1 of 3) of the maintenance videos with an agreement of 100% (see Table 3).

Table 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>Number of Steps Recorded</th>
<th>Percent of Agreement of Data Collectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>281/288</td>
<td>97.6%</td>
</tr>
<tr>
<td>Video Prompting Instruction</td>
<td>495/560</td>
<td>88.3%</td>
</tr>
<tr>
<td>Maintenance</td>
<td>3/3</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Teacher Fidelity of Instruction

The graduate assistant attended a one hour training to review the procedures with teacher fidelity of instruction. The teacher provided verbal examples using the teacher script for pre training (see Appendix G) and the teacher script for the VPI (see Appendix H) both with and without errors. The graduate assistant and teacher practiced recording the results of the teacher’s delivery of instruction using the pre-training teacher fidelity checklist (see Appendix E) and the VPI teacher checklist (see Appendix F) until there was 100% agreement on two consecutive trial sessions.

The teacher fidelity checklists for all pre training and the VPI sessions were collected and reviewed daily. Fidelity data were recorded for teacher behaviors during the study and compared daily. These included: (a) turning on the laptop and moving to the first slide of the Power Point, (b) prompting the student to begin, (c) adhering to the pre-training script and the VPI script, (d) recording prompts during the VPI, and (e) delivering of positive reinforcement. Teacher fidelity was determined using the following formula

\[
\text{Teacher Fidelity} = \frac{\text{instruction components implemented appropriately}}{\text{instruction components implemented appropriately} + \text{instruction components implemented inappropriately}} \times 100
\]

The teacher and a graduate assistant analyzed 100% of the pre training videos. The teacher fidelity for the pre-training was 99.4%. The teacher and a graduate assistant analyzed 100% of the VPI videos. The teacher fidelity for the VPI was 98.2% (see Table 4).
Table 4

Teacher Fidelity Agreement Data

<table>
<thead>
<tr>
<th>Measure</th>
<th>Number of Teacher Script Phrases Counted</th>
<th>Percent of Agreement of Data Collectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training Fidelity</td>
<td>875/880</td>
<td>99.4%</td>
</tr>
<tr>
<td>Video Prompting Instruction Teacher Fidelity</td>
<td>1718/1750</td>
<td>98.2%</td>
</tr>
</tbody>
</table>

Summary

The baseline, VPI, the level of SLP, and maintenance were evaluated to ascertain the efficacy of using video prompting instruction to teach students with ID to use a cell phone. Data suggest that Carlos, Eddie, and John increased their ability to use the cell phone to make a call as a result of the VPI. Carlos, Eddie, and John each reached criteria during the last two sessions of the instruction (e.g., 12 out of 16 steps completed independently for two consecutive sessions). Andre’s response to instruction demonstrated no trend and he did not reach criteria due to the end of the school year.

Baseline means were examined to ascertain each student’s knowledge of and general ability to use the cell phone used in this study. No prompts were offered. For each session of the VPI, the number of steps completed correctly were scored (see Figure 1) and the level of prompts (verbal, gesture/verbal, physical/verbal, incorrect) needed to complete the task were recorded (see Appendix N). Carlos, Eddie, and John demonstrated an upward trend in the number of steps completed correctly while the intrusiveness of the prompts needed declined. However, only two of the students were able to participate in the
Figure 1. Number of steps completed per session. This figure illustrates the number of steps completed correctly during baseline, Video prompting instruction, return to baseline, and maintenance.
CHAPTER FIVE

DISCUSSION

Cell phones are ubiquitous to today’s lifestyle. The use of a cell phone is no longer simply about convenience, but involves rudiments of digital social awareness and connection (Pewinternet.org, 2010). The cell phone is a life tool that is fundamental to participation in a technological society (Prensky, 2011). Students with intellectual disabilities (ID) have the same desire to communicate as their peers without disabilities (Hallgren et al., 2011; Stock et al., 2008). Autonomous communication skills allow individuals to make choices and connections that are an integral part of self-determined behavior (Deci & Ryan, 2000). Cell phones for youth are representative of independence, autonomy, status, and being socially connected (Pewinternet.org, 2010). These components contribute to the quality of life in the transition process to adulthood. Thus, it is important to provide basic digital training as a natural and age appropriate skill to this population (Cohen & Metzger, 1998; Kellems & Morningstar, 2010; Turnbull et al., 2003).

Research indicates that there is a disparity in the use of technology with students with ID and their peers (Stock et al., 2008). Obstacles to technology use include training, support, and cost (Bryen et al., 2007). Training students with ID to use a landline telephone for emergency purposes and in the community has been addressed in the past (Horner, et al., 1987; Leff, 1974; Leff, 1975; Risley, & Cuvo, 1980; Smith, & Meyers, 1979; Test et al., 1990). However, little research has been conducted concerning teaching students with ID to use a cell phone and no research was found that focuses on the digital skills necessary to navigate a cell phone (e.g., menu, scroll, select) (Manley et al., 2008; Taber et al., 2002;
Taber et al., 2003). Students with ID must be taught basic digital skills as a transition skill in order to connect with work and their social network of family and friends.

Existing research supports the use of video prompting instruction (VPI) as a method to teach students with ID (Alberto, Cihak, & Gama, 2004; Lagrice & Blampied, 1994; Mechling, Pridgeon, & Cronin, 2005; Sigafoos et al., 2005). Video prompting instruction is the recording of a task that is segmented into the specific steps necessary to complete the task. Video prompting instruction offers flexibility in that it can be created by the teacher, and specific to the skill to be taught (Mechling, 2005). It also allows for multiple viewings for practice and can be shown on a number of devices (e.g., computer, laptop, cell phone). A System of Least Prompts (SLP) (correct, verbal, verbal/gesture, verbal/physical, incorrect/no response) often is incorporated to guide a student to complete a task, after allowing a student the opportunity to progress as much as they can independently (Wolery et al., 1986).

The purpose of this study was to evaluate the effectiveness of VPI to teach students with ID to navigate a cell phone and make a call. The goal of the study was to evaluate the effectiveness of the VPI to teach these skills (e.g., turn on a cell phone, scroll for a contact, initiate the phone call, speak to the person called, end the call), while allowing for consistent instruction and multiple practices. It was predicted that the students would increase their ability to use the cell phone, decrease the intrusiveness of prompts with the VPI, and maintain the new skills learned.

This VPI study continued over the course of 19 weeks. The study was organized by pre-training, baseline, intervention, and maintenance phases. Ninety-nine percent of all of the instruction was done without other students in the room to control for the diffusion of
treatment. A multiple probe across subjects design was used. All students participated in a minimum of three baselines (Barlow et al., 2009). The data indicated that for three of the four students the VPI paired with the SLP was effective in increasing the number of steps completed independently to use a cell phone (Mechling, et al., 2008, Payne et al., 2012).

During the pre training to teach the students to use the equipment, people with whom the students were familiar were represented in each slide. This strategy was successful in motivating the students to use the Power Point (Jang, Reeve, & Deci, 2010). Also, during the pre-training phase it was necessary to modify the original pre-training teacher script and VPI teacher script to shorten the phrases to facilitate a smoother transition between tasks.

**Implementation of Video Prompting Instruction**

Each student received instruction during one-on-one sessions. The student clicked on the picture to play the video, perform the skill, and click the right arrow button to proceed to the next slide. The students progressed through all 16 steps of the VPI during each session using the system of least intrusive prompts. Criteria were set at achieving 12 out of the 16 steps identified in the task analysis for two days in a row. All sessions were videotaped.

Eddie continued to be within 2-3 steps from criteria for 15 sessions. It appeared that he was having trouble playing the video, performing the steps before the light on the cell phone dimmed, and moving to the next slide. For example, from session 15 to session 30 Eddie required a majority of gestural prompts. In session 31 the teacher took the responsibility of starting the video and moving to the next slide. This allowed Eddie to
focus on the phone. He immediately achieved criteria in the next two sessions with these modifications (Hammond et al., 2010; Taber et al, 2003).

John’s second baseline probe, following Carlos reaching criteria, was elevated (12 compared to the 5-7 range of the other baseline probes). This probe was conducted after his presence in the classroom during another student’s instruction and may represent a diffusion of treatment. However, the three baseline probes conducted immediately preceding his VPI established a stable baseline with no trend. John achieved criteria in the first two sessions. Considerations for this occurrence include the diffusion of treatment, his own observations from his home environment, and/or his high degree of self determination (Bandura, 1977; Turnbull & Turnbull, 1996; Wehmeyer & Schalock, 2001).

Andre’s instruction was interrupted following his first four sessions for a total of 12 days as he left early for spring break. Andre did not reach criteria following 29 sessions. The number and intrusiveness of the prompts throughout his training were inconsistent with no ascending or descending trend. At times Andre was nonresponsive, he would close his eyes or sleep during instruction. He was absent the last two days of instruction prior to the end of school. While Andre was able to open the phone and turn it on, often he would not watch the videos and relied on the teacher’s use of gestural prompts. When his friend answered the phone, Andre enjoyed talking to him. On three different occasions, he did not want to participate in a second training session. Different modifications were made to accommodate Andre, including having the teacher click to play the video and move to the next slide. The VPI typically was delivered in the mornings, but for a few sessions in the afternoon to ascertain if he had a preference. Neither instructional time resulted in a change in his performance if he had a preference. This was Andre’s first year in the postsecondary
program and he had experienced multiple placements throughout his secondary career. Therefore, his behaviors may be related to an attempt to achieve autonomous control of his learning environment (Wells & Sheeney, 2012).

**System of Least Prompts**

Question two addressed the level of the SLP. The SLP used in this study began with a verbal prompt, moved to a gestural/verbal prompt, then to a physical/verbal prompt as needed (Mechling & Gast, 1997). This system was effective in guiding the students through the VPI while allowing them time to process the video prompt with the least amount of intrusion (Manely et al., 2008, Taber et al., 2002).

Most of the prompting for all students centered on the steps seven through ten that required the *scroll* application (see Appendix O). These steps required the use of a square outline around the center button on the cell phone and appeared difficult for the students to mimic from the video to the cell phone in their hands. These step continued to require the teacher to provide a gestural/verbal or physical/verbal prompt throughout the study. This difficulty may be due to the peculiar angle at which the video was recorded, suggesting that perspective is important when developing videos for instruction. It also may reflect the toggling action on the cell phone being less defined as opposed to a button, requiring more practice.

**The Maintenance of Skills**

Maintenance was conducted the same as baseline, without the video prompting instruction. The teacher gave the phone to the student and asked him to: (a) turn on phone,
(b) select menu (c) scroll for contact, (d) make the call, and (e) end the call. Maintenance probes were recorded using the data collection sheet (see Appendix I). There were a total of three maintenance sessions. Eddie participated in two maintenance probes, the first one week after reaching criteria and the second six weeks following criteria. John participated in a maintenance probe six weeks after achieving criteria.

Data indicated that Eddie maintained more skills during maintenance than he demonstrated at baseline one week after reaching criteria and at six weeks following criteria. John maintained a higher level of skills than baseline six weeks after reaching criteria (Manely, 2008). Carlos reached maximum age for school attendance before a maintenance probe was conducted (NAC, 2011). Therefore, no maintenance information was available for him.

Andre did not achieve criteria and did not participate in the maintenance phase. His performance throughout the study was inconsistent. This might be due to his loss of interest in the cell phone, not following the prompts, wanting attention for not participating, or taking advantage of opportunities to increase his independence and autonomy (Powers et al., 1996). He did attain a maximum score of 8 out of 16 twice.

Carlos, Eddie, and John participated in a return to baseline probe immediately following reaching criteria. Data indicated that Carlos and John demonstrated more steps completed correctly than their beginning baseline data. However, for Eddie data indicated the return to baseline probe was consistent with his baseline, suggesting he did not retain the skills learned using VPI.
Conclusions

Four conclusions can be drawn from this study. They are based on the data collected during the video prompting instruction. When evaluating the conclusions, the limitations of this study should be considered.

1. Video prompting instruction paired with a system of least prompts appears to be effective in teaching students with ID to use a cell phone.

2. Overall, the intrusiveness of the prompts decreased with repeated use of the VPI, which is indicative that the students became familiar with the steps and the steps were being committed to memory.

3. The data indicated that the video prompting instruction steps requiring the scroll action, that used an undefined toggle application, was an obstacle for all the students throughout the VPI.

4. The perspectives from which video prompts are recorded are important to students with ID to replicate a skill.

Summary

There is a need for more research focused on the use of technology with people with ID (Bryen, Carey & Friedman, 2007; Stock et al., 2008). Currently, little research has been conducted concerning teaching students with ID to use a cell phone (Taber et al., 2002; Manley et al., 2008). This study contributes to research examining digital access for individuals with ID.

Video prompting instruction appears in the research to teach a variety of skills to students (Mechling, 2005). This study was conducted to evaluate video prompting
instruction as a viable instructional method to teach students with ID how to use a cell phone. Additionally, the level of prompts within the SLP and maintenance of skills were assessed.

The data from this study suggest that Carlos, Eddie, and John benefited from the video prompting instruction. In addition, Eddie and John maintained some of the cell phone skills taught over time. It is possible that if Carlos had not reached maximum age and exited the school system he could have demonstrated maintenance skills. This prediction is based on both the rate in which he achieved criteria (15 sessions) and his return to baseline probe immediately following reaching criteria (9 steps completed independently compared to the baseline $M = 3.33$).

The data suggests that the students in this study had minimal cell phone skills at the beginning of the study. However, at the end of the study three of the four students with ID progressed in their use of a cell phone. More studies into the long-range effects of cell phone instruction and use by student with ID (e.g., how often do they use a cell phone, who do they call, do they use it for other applications) would provide data for future instruction and transition applications.

The students appeared to enjoy using their cell phones, especially when talking to their friends (Kellems & Morningstar, 2011; Turnbull & Turnbull, 1996). Incorporating peers without disabilities and individuals known to the students appeared to have a motivating effect. Having the video prompting instruction on a computer in the classroom became a routine that most of the students looked forward to as an aspect of daily instruction (Bryen et al., 2007; Hallgren et al., 2011; Stock et al., 2008). Students knowing
where to find information and being able to access that information aligns with self
determination and autonomous learning (Schalock et al., 2002; Wichmann, 2011).

**Recommendations for Future Study**

Research indicates that cell phones offer a sense of safety and independence to the
user (Cohen & Metzger, 1998). It appears that teaching rudimentary cell phone skills may
be fundamental for digital normalization as students with ID transition to adulthood and the
technological society in which they live (Hallgren et al., 2011). This study suggests that
students with moderate ID can learn cell phone skills when video prompting instruction is
implemented. It is important to note that cell phones offer many applications useful to daily
life (e.g., alarms, calendars, calculators). Due to the importance of teaching students with
ID digital skills, future research is warranted. The following recommendations are
suggested for further studies based on the results of this study.

1. A replication of the study should be conducted using group instruction to
   ascertain the effects of peer modeling and peer tutoring for students with ID in
   learning how to use a cell phone.

2. A replication of this study should be conducted with various groups of students
   (e.g., age groups, other disability groups). This would provide information
   concerning the optimal age for teaching cell phone usage as well as provide
   instructional protocol for specific disability groups.

3. Research should be conducted using smart phones with touch screens. More
   sophisticated cell phones may require more sophisticated instructional
   strategies.
4. Research should be conducted in which students with ID are taught video calling using a variety of devices (e.g., cell phones, tablets, computers). As technology advances people communicate on a variety of digital devices.

5. Research should be conducted in which students with ID are taught phone social skills. Placing a phone call is the first step in communication, the ability to communicate appropriately establishes the sense of community and friendship important to students with ID.
APPENDIX A

TASK ANALYSIS
Task Analysis for Using an AT&T Go Phone to Make a Call

1. Pick up phone
2. Hold phone with the AT&T circle at the top
3. Open phone with thumb at bottom of phone
4. Check that the screen is on top and numbers on bottom
5. Push on the red button, count to 3 and let go
6. Push “menu” button
7. Scroll down to “Address Book”
8. Push Select when on “Address Book”
9. Push scroll button down to find contact
10. Scroll for Phone Number
11. Press the green “Send” button
12. Wait for someone to answer the phone (Do you hear it ring?)
13. When person answers say, “Hello, this is (student will say their name)”
14. Talk with person called, “Hey, what’s up?”
15. When done talking say, “OK, see you later”
16. Press red button
APPENDIX B

PARENT LETTER
Dear Parents,

Your child’s postsecondary program has been selected to participate in a study to use video prompting instruction to teach your child to use a cell phone. We hope to learn if video prompting instruction is an effective method to teach your student knowledge of turning on the phone, scrolling for a contact, initiating a phone call, speaking to the person called, and ending the phone call, as well as maintaining these targeted skills. This will take place during the regular school day and a cell phone will be provided for instruction. You will find the details outlined in the parental consent form attached. Also attached is an assent form for your child to sign. We will explain the study to your child in the classroom and ask that you review it with them at home as well. We also ask that during the study your child not use a cell phone outside the school environment in order to maintain the validity of the study. Your child’s participation in this study is voluntary. Your child may refuse to participate in this study or in any part of this study. You are encouraged to ask questions at any time during the research study. I can be reached at (702)799-5766 ext. 4004.

Thank you,

Allenda Zionch, M.Ed
APPENDIX C

PARENTAL INFORMED CONSENT
TITLE OF STUDY: An Evaluation of Video prompting instruction to Teach Student with Intellectual Disabilities to Use a Cell Phone

INVESTIGATORS): Allenda Zionch and Dr. Kyle Higgins

CONTACT PHONE NUMBER: 895-1102

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted, contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794 or via email at IRB@unlv.edu.

Purpose of the Study
Your child is invited to participate in a research study. The purpose of this study is to teach your child to use a cell phone.

Participants
Your child is being asked to participate in the study because he or she is currently enrolled in a postsecondary program for students with intellectual disabilities.

Procedures
If you agree to allow your child to participate in this study, he or she will be asked to do the following: (a) be videotaped while participating in instruction to learn cell phone skills (prompts will be given as needed to ensure completion of a phone call). (b) participate in assessments designed to measure their ability to turn on the phone, scroll for a contact, initiate a phone call, speak to the person called, and end the phone call(before instruction, after instruction and five weeks following the end of instruction).

Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1212-4331M
Exempt Date: 03/05/13
Your child will receive two lessons daily while the special education teacher in your child’s classroom monitors the lessons and provides prompts as necessary.

The teacher will set up a video camera to videotape the students when the lessons are being taught. The teacher will anonymously collect your child’s IQ score. The research team will view the videos to make sure the teacher is delivering instruction correctly. The study will continue through your child achieving criteria and maintenance.

**Benefits of Participation**

There may be direct benefits to your child as a participant in this study, such as learning digital communication skills through the use of a cell phone. However, we hope to learn if video prompting instruction increases student knowledge of turning on the phone, scrolling for a contact, initiating a phone call, speaking to the person called, and ending the phone call, as well as maintaining these targeted skills.

**Risks of Participation**

There are risks involved in all research studies. This study may include only minimal risks. The incorporation of accepted teaching practices will ensure access to cell phone skills instruction for your child. This study involves the unobtrusive observation of students via videotapes. Because of this, there are minimal risks to the students from participation. Minimal risks include breach of confidentiality; however numerous steps will be taken to prevent this (e.g., the videos will only be viewed by the research team, the videos will be kept in a locked file cabinet in a lock room).

**Cost /Compensation**

There will be no financial cost for your child to participate in this study because instruction will occur in your child’s classroom during the typical school day. Your child will participate in two lessons daily until reaching criteria of independently completing 75% of the steps necessary to complete a phone call.

**Confidentiality**

All information gathered in this study will be kept as confidential. No reference will be made in written or oral materials that could link your child to this study. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time, the information gathered will be destroyed.

*Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1212-4331M*

*Exempt Date: 03/05/13*
Voluntary Participation

Your child’s participation in this study is voluntary. Your child may refuse to participate in this study or in any part of this study. Your child may withdraw at any time without prejudice to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent:

I have read the above information and agree to my child’s participation in this study. I have been able to ask questions about the research study. I am at least 18 years of age. A copy of this form has been given to me.

__________________________________________________________________________  __________
Signature of Parent                                             Date

__________________________________________________________________________
Parent Name (Please Print)

Audio/Video Taping:

I agree for my child to be audio or video taped for the purpose of this research study.

__________________________________________________________________________  __________
Signature of Parent                                             Date

__________________________________________________________________________
Participant Name (Please Print)

Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1212-4331M

Exempt Date: 03/05/13
ASSENT TO PARTICIPATE IN RESEARCH

An Evaluation of Video prompting instruction to Teach Student with Intellectual Disabilities to Use a Cell Phone

1. My name is Allenda Zionch

2. We are asking you to be part of a research study because we are trying to learn more about how to teach you to successfully turn on, scroll, initiate a phone call, speak to the person called, and end the call using a cell phone.

3. If you agree to be a part of this study you will: (a) be videotaped during instruction, (b) receive instruction in how to make a call using a cell phone, (c) participate in two lessons daily until reaching a criteria of independently completing 75% of the steps necessary to complete a phone call (d) be assessed for maintenance (e) allow your IQ score to be collected anonymously.

4. Participation in this study will have minimal risks. Since you are being videotaped there is a small chance that you participation may not remain confidential. We are taking several steps to make sure this does not happen (e.g., locking the videos in a file cabinet).

5. As a result of this instruction you may learn the steps needed to use a cell phone to make a call.

6. Please talk to your parents about this before you decide to participate or not. We are also asking your parents for their permission for you to participate in this study. But even if your parents say “yes” you can still decide not to participate.

7. If you do not wish to be part of this study, you don’t have to participate. Remember, being part of this study is up to you and it will not upset anyone if you don’t want to participate. Even if you change your mind later and decide you want to stop.

8. You can ask any questions you like about this study. If you have a question later you can call Dr. Higgins at 895-1102 or Allenda Zionch at 799-5766 ext. 4004. You can call anytime to ask questions.

Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1212-4331M

Exempt Date: 03/05/13
9. If I have not answered your questions or you feel uncomfortable talking to me about your question, you or your parent can call the UNLV Office of Research Integrity – Human Subjects at 702-895-2794 or toll free at 877-895-2794.

By signing your name at the bottom you agree to participate in this study and to be videotaped, and allow your IQ score to be collected anonymously. A copy of this form will be given to you and your parents after you have signed it.

____________________________________  _____________
Print your name                      Date

____________________________________
Sign your name

Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1212-4331M
Exempt Date: 03/05/13
Pre-Training Teacher Fidelity Checklist

Teacher ID: __________________________     Class ID: ____________________________

Rater Name: __________________________   Session ID: __________________________

Date: _______________________________

<table>
<thead>
<tr>
<th>The teacher…</th>
<th>Yes</th>
<th>No</th>
<th>Rater Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turned on the video camera for data collection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turned on computer and brought the software to the beginning of instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses the teacher script to instruct each session</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applies a verbal, gesture or physical prompt as needed</td>
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<td></td>
<td></td>
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<tr>
<td><strong>Teacher says:</strong> “Please have a seat here next to me. Let’s review how to use the power point slides.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “This is the first slide; it has a picture of _____. Use the mouse to click on the picture (point to the picture) and watch the video.”</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “Now that the video is over let’s go to the next slide. Push the arrow button (point to the right arrow button)”</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher says: “Good Job! Let’s do it again”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher says: “Can you show me how to click on the picture to start the video?”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher says: “Great! Can you show me how to click the arrow button to go to the next slide?”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Offers verbal praise at the completion of the task
APPENDIX F

VPI TEACHER FIDELITY CHECKLIST
VPI Teacher Fidelity Checklist

Teacher ID:________________________   Class ID:__________________________

Rater Name:_______________________    Session ID:________________________

Date:_____________________________

<table>
<thead>
<tr>
<th>The teacher…</th>
<th>Yes</th>
<th>No</th>
<th>Rater Notes</th>
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</thead>
<tbody>
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<td>Turned on the video camera for data collection</td>
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<td></td>
<td></td>
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<td>Turned on computer and brought the software to the beginning of instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses the teacher script to instruct each session</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “We are going to practice how to use your phone by looking at some video. After you watch the video you do the same thing with your phone as the person in the video. Do you remember how to start the video?”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>If the student says, “no”</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “Use the mouse to click on the picture (point to the picture) and watch the video.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>If the student says, “yes”</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “Let’s begin”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal prompts per step as needed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “Pick up your phone like the person in the video”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Teacher says:</strong> “Hold your phone like the person in the video.”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Teacher says:** “Open the phone like the person in the video.”

**Teacher says:** “Show me the screen is on top and the numbers are on the bottom like the person in the video.”

**Teacher says:** “Push the red button on your cell phone like the person in the video.”

**Teacher says:** “Push the menu button like the person in the video.”

**Teacher says:** “Scroll to find Address Book like the person in the video.”

**Teacher says:** “Push Select on Address Book.”

**Teacher says:** “Scroll to find your phone number like the person in the video.”

**Teacher says:** “Push the select button for your contact, or phone number like the person in the video.”

**Teacher says:** “Press the green send button like the person in the video.”

**Teacher says:** “Are you waiting for someone to answer the phone like the person in the video?”

**Teacher says:** “Hi, this is (student will say their name)” like the person in the video

**Teacher says:** Say, “Hey what’s up? like the person in the video.”

**Teacher says:** “Say OK, see you later, like the person in the video.”

**Teacher says:** “Press the red button to end the call like the person in the video.”
<table>
<thead>
<tr>
<th>Applies a verbal, gesture or physical prompt as needed</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Records prompts given on the data sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offers verbal praise at the completion of the task</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G

PRE-TRAINING TEACHER SCRIPT
1. **Teacher says:** “Please have a seat here next to me. Let’s review how to use the power point slides.”

2. **Teacher says:** “This is the first slide; it has a picture of a ____. Use the mouse to click on the picture (point to the picture) and watch the video.”

3. **Teacher says:** “Now that the video is over let’s go to the next slide. Push the arrow button (point to the arrow button)”

4. **Teacher says:** “Use the mouse to click on the picture (point to the picture) and watch the video.”

5. **Teacher says:** “Good Job! Let’s do it again”

6. **Teacher says:** “Now that the video is over let’s go to the next slide. Push the arrow button (point to the arrow button)”

7. **Teacher says:** “Use the mouse to click on the picture (point to the picture) and watch the video.”

8. **Teacher says:** “Now that the video is over let’s go to the next slide. Push the arrow button (point to the arrow button).”

9. **Teacher says:** “Use the mouse to click on the picture (point to the picture) and watch the video.”

10. **Teacher says:** “Good job! Let’s do it again”

11. **Teacher says:** “Now that the video is over let’s go to the next slide. Push the arrow button (point to the arrow button).”

12. **Teacher says:** “Use the mouse to click on the picture (point to the picture) and watch the video.”

13. **Teacher says:** “Now that the video is over let’s go to the next slide. Push the arrow button (point to the arrow button).”

14. **Teacher says:** “Use the mouse to click on the picture (point to the picture) and watch the video.”

15. **Teacher says:** “Good job! Let’s do it again”

16. **Teacher says:** “Great! Can you show me how to click the arrow button to go to the next slide?”

17. **Teacher says:** “Good Job. Can you show me how to click on the picture to start the video?”
Teacher says: “We are going to practice how to use your phone by looking at some video. After you watch the video you do the same thing with your phone as the person in the video. Do you remember how to start the video?”

If the student says, “no”
Teacher says: “Use the mouse to click on the picture (point to the arrow) and watch the video.”

If the student says, “yes”
Teacher says: “Let’s begin”

Verbal prompts per step as needed

1. Teacher says: “Pick up your phone like the person in the video”
2. Teacher says: “Hold your phone like the person in the video.”
3. Teacher says: “Open the phone like the person in the video”
4. Teacher says: “Show me the screen is on top and the numbers are on the bottom like the person in the video.”
5. Teacher says: “Push the red button on your cell phone like the person in the video.”
6. Teacher says: “Push the menu button like the person in the video.”
7. Teacher says: “Scroll to find Address Book like the person in the video.”
8. Teacher says: “Push Select on Address Book.”
9. Teacher says: “Scroll to find your phone number like the person in the video.”
10. Teacher says: “Push the select button for your contact, or phone number like the person in the video.”
11. Teacher says: “Press the green send button like the person in the video.”
12. Teacher says: “Are you waiting for someone to answer the phone like the person in the video?”
13. Teacher says: “Hi, this is (student will say their name) like the person in the video.”
15. Teacher says: “Say OK, see you later, like the person in the video.”
16. Teacher says: “Press the red button to end the call like the person in the video.”
APPENDIX I

DATA COLLECTION SHEET
### Data Collection Sheet

<table>
<thead>
<tr>
<th>Steps</th>
<th>%</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>100</td>
<td>Press red button</td>
</tr>
<tr>
<td>15</td>
<td>93.75</td>
<td>When done talking say, “OK, see you later”</td>
</tr>
<tr>
<td>14</td>
<td>87.5</td>
<td>Talk with person called, “Hey, what’s up?”</td>
</tr>
<tr>
<td>13</td>
<td>81.25</td>
<td>When person answers say, “Hello, this is name”</td>
</tr>
<tr>
<td>12</td>
<td>75</td>
<td>Wait for someone to answer the phone</td>
</tr>
<tr>
<td>11</td>
<td>68.75</td>
<td>Press the green “Send” button</td>
</tr>
<tr>
<td>10</td>
<td>62.5</td>
<td>Scroll for Phone Number</td>
</tr>
<tr>
<td>9</td>
<td>56.25</td>
<td>Push scroll button down to find contacts</td>
</tr>
<tr>
<td>8</td>
<td>50</td>
<td>Push Select when on “Address Book”</td>
</tr>
<tr>
<td>7</td>
<td>43.75</td>
<td>Scroll down to “Address Book”</td>
</tr>
<tr>
<td>6</td>
<td>37.5</td>
<td>Push “menu” button</td>
</tr>
<tr>
<td>5</td>
<td>31.25</td>
<td>Push on the red button, count to 3 and let go</td>
</tr>
<tr>
<td>4</td>
<td>25</td>
<td>Check screen is on top and numbers on bottom</td>
</tr>
<tr>
<td>3</td>
<td>18.75</td>
<td>Open Phone with thumb at bottom of phone</td>
</tr>
<tr>
<td>2</td>
<td>12.5</td>
<td>Hold phone with the letters AT&amp;T at the top</td>
</tr>
<tr>
<td>1</td>
<td>6.25</td>
<td>Pick up phone</td>
</tr>
</tbody>
</table>

% Correct

DATES

**Key:**
- Correct = +
- Incorrect = -
- verbal prompt = v
- gestural prompt with verbal = gv
- physical prompt with verbal = pv
APPENDIX J

LETTER OF ACCESS FROM PRINCIPAL
Southwest Career and Technical Academy

Office of Research Integrity – Human Subjects
University of Nevada, Las Vegas
4505 S. Maryland Parkway, Box 451047
Las Vegas, NV 89154-1047

Subject: Letter of Acknowledgement of a Research Project at a CCSD Facility

Dear ORI – Human Subjects:

This letter will acknowledge that I have reviewed a request by Allenda Zionch to conduct a research project entitled, An Evaluation of Video Prompting to Teach Student with Intellectual Disabilities to Use a Cell Phone at Southwest Career and Technical Academy.

When the research project has received approval from the UNLV Institutional Review Board and the Department of Research of the Clark County School District, and upon presentation of the approval letter to me by the approved researcher, as site administrator for Southwest Career and Technical Academy I agree to allow access for the approved research project.

If we have any concerns or need additional information, the project researcher will be contacted or we will contact the UNLV Office of Research Integrity – Human Subjects at 895-2794.

Sincerely,

[Signature]

Authorized Facility Representative Signature

[Date]

Date

[FELICIA NEMCEK]

Principal

Print Representative Name and Title

7050 W. Shelbourne Ave. • Las Vegas, NV 89113 • Phone: 702-799-5766 • Fax: 702-799-5751
Pick up the phone

Hold phone with ATT circle at the top

Open the phone with thumb at the bottom

Check that the screen is on top and the numbers on bottom

Push on the red button, count to three, and let go

Push menu button
Scroll up and over to address book

Push select on address book

Push select on contacts

Scroll for phone number

Push the green send button

Wait for someone to answer the phone
When someone answers say, “Hi, this is (say your name)”

Talk with person called, “Hey, what’s up?”

When done talking say, “Ok, see you later”

Push the red button to end the call
APPENDIX L

MODEL RELEASES
Model Release

In return for value received, I do hereby authorize the University of Nevada Las Vegas (UNLV) or persons designated by UNLV to use my photograph(s) in publications and materials pertaining thereto, published or copyrighted by UNLV, its successor and assigns. This request includes world rights in all languages and all future revision and editions thereof. This permission allows UNLV to distribute the material in any manner or through media, including internet access.

This contract may be signed with an electronic representation of facsimile of your signature ("Electronic Format") as an alternative to your original signature. If you choose to provide your signature in Electronic Format only, it shall be considered as the best evidence of your signature and your agreement to the terms of this release.

Signature: [Signature] Date: [Date]

[Signature: [Signature] Date: [Date]}
Model Release

In return for value received, I do hereby authorize the University of Nevada Las Vegas (UNLV) or persons designated by UNLV to use my photograph(s) in publications and materials pertaining thereto, published or copyrighted by UNLV, its successor and assigns. This request includes world rights in all languages and all future revision and editions thereof. This permission allows UNLV to distribute the material in any manner or through media, including internet access.

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Signature: ___________________________ Date: 11-13-13
Model Release

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Signature: [Signature] Date: Nov 12, 2013

Gema Chawa
Model Release

In return for value received, I do hereby authorize the University of Nevada Las Vegas (UNLV) or persons designated by UNLV to use my photograph(s) in publications and materials pertaining thereto, published or copyrighted by UNLV, its successor and assigns. This request includes world rights in all languages and all future revision and editions thereof. This permission allows UNLV to distribute the material in any manner or through media, including internet access.

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Signature:

Date: 11/13/13
MODEL RELEASE

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Signature: __________________ Date: 11-13-13
APPENDIX M

PRE TRAINING POWER POINT
Pre-Training Power Point
APPENDIX N

LEVEL OF PROMPTS PER SESSION
### Level of Prompts per Session

<table>
<thead>
<tr>
<th>Student</th>
<th>Level of Prompt</th>
<th>Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32</td>
<td></td>
</tr>
<tr>
<td>Carlos</td>
<td>v</td>
<td>0 3 0 2 1 1 0 2 1 0 0 2 1 0 0</td>
</tr>
<tr>
<td></td>
<td>gv</td>
<td>2 1 2 3 5 5 4 3 1 3 2 4 4 3 1</td>
</tr>
<tr>
<td></td>
<td>pv</td>
<td>6 2 5 2 2 1 2 1 5 2 2 1 0 1 3</td>
</tr>
<tr>
<td></td>
<td>incorrect</td>
<td>0 1 0 0 0 0 0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>8 7 7 8 7 6 6 7 5 4 5 5 4 4</td>
</tr>
<tr>
<td>Eddie</td>
<td>v</td>
<td>0 0 1 2 1 0 0 1 0 1 0 1 0 1 3 0 2 1 1 1 0 1 3 0 0 2 1 2 0 1 1</td>
</tr>
<tr>
<td></td>
<td>gv</td>
<td>4 6 5 2 5 7 6 6 5 6 4 5 5 3 3 3 5 4 4 5 5 5 4 2 7 4 4 6 3 6 3 3</td>
</tr>
<tr>
<td></td>
<td>pv</td>
<td>2 2 1 2 1 0 1 0 1 0 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td></td>
<td>incorrect</td>
<td>3 1 1 1 0 1 1 0 1 0 1 1 0 2 0 0 1 1 0 0 1 0 1 1 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>9 9 8 7 7 8 8 6 6 8 5 6 6 5 7 6 6 6 6 5 6 8 4 6 7 5 6 4 4</td>
</tr>
<tr>
<td>John</td>
<td>v</td>
<td>2 2</td>
</tr>
<tr>
<td></td>
<td>gv</td>
<td>2 0</td>
</tr>
<tr>
<td></td>
<td>pv</td>
<td>0 0</td>
</tr>
<tr>
<td></td>
<td>incorrect</td>
<td>0 0</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>4 2</td>
</tr>
<tr>
<td>Andre</td>
<td>v</td>
<td>1 1 1 0 2 0 2 0 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 0 1 0 1 0 1 1 1 0 0</td>
</tr>
<tr>
<td></td>
<td>gv</td>
<td>4 3 1 5 4 0 4 3 4 2 4 4 3 3 2 5 2 1 2 4 2 3 4 3 3 3 6 3 5</td>
</tr>
<tr>
<td></td>
<td>pv</td>
<td>4 6 6 2 2 6 2 4 3 8 4 4 6 4 4 1 3 5 5 4 7 5 4 4 5 4 2 5 3</td>
</tr>
<tr>
<td></td>
<td>incorrect</td>
<td>1 0 0 0 5 3 1 4 2 1 0 4 2 2 6 4 2 5 4 3 1 3 2 4 2 2 1 1 3</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>10 10 8 7 13 9 9 11 10 12 9 13 12 10 13 11 8 12 11 12 10 11 11 11 10 10 9 11</td>
</tr>
</tbody>
</table>
APPENDIX O

PERCENTAGE OF PROMPTS PER STEP
## Percentage of Prompts per Step

<table>
<thead>
<tr>
<th>Video Prompting Instruction Steps</th>
<th>Carlos</th>
<th>Ethan</th>
<th>John</th>
<th>Andre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pick up phone</td>
<td>6.67</td>
<td>0.00</td>
<td>0.00</td>
<td>3.45</td>
</tr>
<tr>
<td>2. Hold phone with the AT&amp;T circle at the top</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>48.28</td>
</tr>
<tr>
<td>3. Open phone with thumb at bottom of phone</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>55.17</td>
</tr>
<tr>
<td>4. Check that the screen is on top and numbers are on bottom</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>5. Push on the red button, count to 3 and let go</td>
<td>33.33</td>
<td>9.38</td>
<td>0.00</td>
<td>3.45</td>
</tr>
<tr>
<td>6. Push “menu” button</td>
<td>73.33</td>
<td>46.88</td>
<td>50.00</td>
<td>93.10</td>
</tr>
<tr>
<td>7. Scroll down to “Address Book”</td>
<td>100.00</td>
<td>46.88</td>
<td>50.00</td>
<td>100.00</td>
</tr>
<tr>
<td>8. Push Select when on “Address Book”</td>
<td>86.67</td>
<td>87.50</td>
<td>100.00</td>
<td>93.10</td>
</tr>
<tr>
<td>9. Push scroll button down to find contact</td>
<td>100.00</td>
<td>62.50</td>
<td>100.00</td>
<td>96.55</td>
</tr>
<tr>
<td>10. Scroll for Phone Number</td>
<td>93.33</td>
<td>90.63</td>
<td>0.00</td>
<td>96.55</td>
</tr>
<tr>
<td>11. Press the green “Send” button</td>
<td>60.00</td>
<td>78.13</td>
<td>0.00</td>
<td>96.55</td>
</tr>
<tr>
<td>12. Wait for someone to answer the phone.</td>
<td>26.67</td>
<td>6.25</td>
<td>0.00</td>
<td>82.76</td>
</tr>
<tr>
<td>13. When person answers say, “Hello, this is…”</td>
<td>6.67</td>
<td>15.63</td>
<td>50.00</td>
<td>17.24</td>
</tr>
<tr>
<td>14. Talk with person called, “Hey, what’s up?”</td>
<td>13.33</td>
<td>28.13</td>
<td>0.00</td>
<td>31.03</td>
</tr>
<tr>
<td>15. When done talking say, “OK, see you later”</td>
<td>0.00</td>
<td>28.13</td>
<td>0.00</td>
<td>72.41</td>
</tr>
<tr>
<td>16. Press red button</td>
<td>20.00</td>
<td>90.63</td>
<td>0.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>
REFERENCES


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CURRICULUM VITAE

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Las Vegas, Nevada 89102 702 – 767 – 0680 (Cell)
Email: allendatz@cox.net
University of Nevada, Las Vegas, Nevada

Education

2006-2014 Ph.D.
*Title of Dissertation:* Evaluation of Video Prompting Instruction to Teach Students with Intellectual Disabilities to Use a Cell Phone
*Department of Educational and Clinical Studies*
*University of Nevada, Las Vegas, Nevada*
*Disability Emphasis:* Intellectual Disabilities and Autism
*Leadership Areas:* Technology in Education and Transition

2006-2007 M.Ed., with honors and distinction
*Department of Educational and Clinical Studies*
*University of Nevada, Las Vegas, Nevada*
*Emphasis Areas:* Intellectual Disabilities and Autism
*Project STEP* (a personnel preparation program for which I was selected to participate)

2005-2006 Bachelor of Science, Dean’s List
*Special Education, Generalist K-12*
*Department of Educational and Clinical Studies*
*University of Nevada, Las Vegas, Nevada*
*Project Cohort* (a personnel preparation program for which I was selected to participate)
### Professional Experience

<table>
<thead>
<tr>
<th>Year</th>
<th>Position</th>
<th>Institution</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008–present</td>
<td>Special Education Teacher</td>
<td>Southwest Career &amp; Technical Academy</td>
<td>Las Vegas, NV</td>
<td>Postsecondary Opportunities for Students in Transition (POST) self-contained program for students 18-21 with Intellectual Disabilities</td>
</tr>
<tr>
<td>2006-2008</td>
<td>Special Education Teacher</td>
<td>Shadow Ridge High School</td>
<td>Las Vegas, NV</td>
<td>Self-contained program for students with Intellectual Disabilities</td>
</tr>
<tr>
<td>2002-2005</td>
<td>Special Programs Teacher Assistant (SPTA)</td>
<td>J.C. Fremont Middle School</td>
<td>Las Vegas, NV</td>
<td>Self-contained program for students with Deafness/Hard of Hearing</td>
</tr>
<tr>
<td>(SPTA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2002</td>
<td>Special Programs Teacher Assistant (SPTA)</td>
<td>Hyde Park Middle School</td>
<td>Las Vegas, NV</td>
<td>Self-contained program for students with Specific Learning Disabilities (SLD)</td>
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</table>
## Teaching

### University Courses Taught

<table>
<thead>
<tr>
<th>Course Number and Title</th>
<th>Course Description</th>
<th>Semester Taught</th>
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<tbody>
<tr>
<td>ESP 701: Introduction to Special Education and Legal Issues (online)</td>
<td>Course designed to introduce the characteristics, training, and educational needs of students with disabilities and gifts and talents. Prerequisite to all subsequent courses in special education.</td>
<td>Fall 2013</td>
</tr>
<tr>
<td>ESP 701: Introduction to Special Education and Legal Issues (online)</td>
<td>Course designed to introduce the characteristics, training, and educational needs of students with disabilities and gifts and talents. Prerequisite to all subsequent courses in special education.</td>
<td>Fall 2012</td>
</tr>
<tr>
<td>ESP 718: Assessments for Students with Moderate to Severe Disabilities</td>
<td>Course is designed with emphasis on diagnosis and problems encountered in assessing persons who have severe mental retardation. Practice of observation techniques and development of skills in the use of appropriate developmental scales and other assessment tools as well as the use of alternative assessment procedures will be included.</td>
<td>Spring 2010</td>
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### University Guest Lectures

<table>
<thead>
<tr>
<th>Course Number and Title</th>
<th>Presentation Title</th>
<th>Semester</th>
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</thead>
<tbody>
<tr>
<td>EDSP 432: Serving Individuals with Disabilities and Their Families</td>
<td>Secondary Education for Students &amp; Parents in Special Education</td>
<td>Spring 2014</td>
</tr>
<tr>
<td>EDSP 432: Parent Involvement in Special and General Education</td>
<td>Secondary Education for Students &amp; Parents in Special Education</td>
<td>Spring 2012</td>
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<tr>
<td>Course</td>
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<td>Fall 2009</td>
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<tr>
<td>-----------------------------------------------------------------------</td>
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<tr>
<td>EDSP 432: Parent Involvement in Special and General Education</td>
<td>Secondary Education for Students &amp; Parents in Special Education</td>
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<tr>
<td>ESP 784: Advanced Special Education Technology, Graduate</td>
<td>Technology Applications for Student with Intellectual Disabilities</td>
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<tr>
<td>ESP 451: Assessment of Diverse Learners with Disabilities in Inclusive Settings</td>
<td>Assessment Modification Techniques for Students with Disabilities in Inclusive Settings</td>
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<tr>
<td>ESP 432: Parent Involvement in Special and General Education</td>
<td>Secondary Education for Students &amp; Parents in Special Education</td>
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</tbody>
</table>

**Scholarship**

**Refereed Publications**


**Refereed Conference Presentations**

Zionch, A. (2013). *A Comparison of Two Instructional Interventions to Teach Students with Intellectual Disabilities How to use a cell phone*. Poster presented at the International Association of Special Educators Annual Conference in Vancouver, Canada.


**Invited Presentations**


**Service**

2012-present       Manuscript Review Board Member  
                   *Journal of International Students*  
                   Arkansas State University  

2009-2012         Committee Member  
                   Best Buddies Citizens  
                   Las Vegas, NV  

170
2008-2009  Committee Member
            Crisis Intervention Team
            Burk High School
            Las Vegas, NV

2007-2008  Committee Member
            Multicultural and Diversity Committee
            Shadow Ridge High School
            Las Vegas, NV

2006-2007  Committee Member
            Scholarship Committee
            Shadow Ridge High School
            Las Vegas, NV

Professional Memberships

2007-present  Member
                Council for Exceptional Children

2009-present  Member,
                UNLV Council for Exceptional Children

2012-present  Member
                Council for Exceptional Children Division on Autism and Developmental Disabilities (DADD)

2012-present  Member
                Council for Exceptional Children Teacher Education Division (TED)

2012-present  Member
                Council for Exceptional Children Technology and Media Division (TAM)

2007-present  Member
                Institute Electrical and Electronics Engineers