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USING VIDEO MODELING PLUS A SYSTEM OF LEAST PROMPTS TO TEACH PEOPLE WITH INTELLECTUAL DISABILITY TO PARTICIPATE IN FAITH COMMUNITIES

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ABSTRACT OF DISSERTATION

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A dissertation proposal submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Education
at the University of Kentucky

By
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ABSTRACT OF DISSERTATION

USING VIDEO MODELING AND A SYSTEM OF LEAST PROMPTS TO TEACH
PEOPLE WITH INTELLECTUAL DISABILITY TO PARTICIPATE IN FAITH
COMMUNITIES

An important part of quality of life for people with moderate and severe intellectual disability (MSD) is being involved in community activities, including participation in faith communities. There is a need for meaningful inclusion of people with disabilities in faith communities beyond physical presence. Although it has been recommended that evidence-based strategies, such as video modeling (VM) be used to increase the meaningful inclusion of people with ID in faith communities, there is a lack of empirical studies using evidence-based practices to teach the skills necessary for participation in community activities. The purpose of this dissertation was to examine the use of an evidence-based practice (i.e., VM) in teaching people with ID to participate in a community activity. This study consisted of a multiple probe across behaviors design to analyze the effect of the VM and a system of least prompts (SLP) on participation in faith communities for persons with ID. The experimental design was replicated across participants and settings in different faith communities. The data indicated that VM and SLP were effective in increasing the number of steps in a task analysis completed by each participant. Additionally, each participant demonstrated maintenance and generalization of learned behaviors.

KEYWORDS: moderate and severe disabilities, community activities, faith communities, video modeling, system of least prompts

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I would like to dedicate this work to my husband, Rob, for his encouragement throughout my doctoral program. I would not have started this journey without him and he has been my constant companion throughout.

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Chapter One

Introduction

People with disabilities make up the largest minority in the United States (Bunch, 2001). According to the United States Census Bureau (Brault, 2012), 18.7% or 56.7 million people had a disability in 2010. These disabilities cause difficulty in performing activities of daily life (Creamer, 2003), including community activities. Of the 56.7 million Americans with disabilities, 5% or nearly 3 million have an intellectual disability (ID; Brault, 2012). Cordes and Howard (2005) surveyed adults with ID about their participation in community and leisure activities and discovered that, upon leaving high school, there was a sharp drop in the amount of physical activities (e.g., sports) and a significant increase in watching television and movies at home. Therefore, the activities that persons with ID may engage in while in school do not necessarily continue into adulthood.

Quality of Life

Quality of life is an important concept in the lives of people with ID (Ault, Collins, & Carter, 2013a). Wolfensberger (1983) introduced the term social role valorization (SRV), that advocates for the enhancement of perceived social images and personal competencies. Wolfensberger states that when a person with ID has more perceived social value, and is encouraged to assume roles and behaviors that are considered desirable and appropriate, expectations are increased and the person is likely to achieve more, thus improving quality of life. It is important, however, that people with ID be seen in places, associate with other people, and engage in activities that are valued by society (Wolfensberger, 2000). Therefore, having people with ID participate in

community activities organized only for people with ID would not have as much perceived value as participating in a community activity with typical members of society.

Several organizations advocating for individuals with disabilities and laws for people with disabilities have issued policy or position statements that address quality of life for people with ID. The American Association on Intellectual and Developmental Disabilities (AAIDD, 2009), an organization of professionals and citizens concerned about intellectual and developmental disabilities, issued a position statement on quality of life, which states that "people with intellectual and/or developmental disabilities must have the opportunity to lead lives that offer them a meaningful quality of life" (para. 3). Although quality of life is specific to each individual, one important aspect of quality of life for people with ID is inclusion in community activities. TASH, an advocacy organization for individuals with severe disabilities, issued a resolution on supports in the community (2000), "Supports shall enable children and adults with disabilities to participate in every aspect of socio-cultural life including, but not limited to, home, school, work, cultural and spiritual activities, leisure, travel and political life" (para. 6).

Legislation has also been enacted to improve the quality of life of people with disabilities. The Individuals with Disabilities Education Act (IDEA; http://idea.ed.gov) states that children with disabilities should be able to participate with children without disabilities in activities in nonacademic settings.

Participation in Faith Communities

One of the community activities that persons with disabilities may experience challenges with is participation in a faith community (Creamer, 2003; Ault, 2010). People with disabilities have a lower rate of participation in faith communities than people

without disabilities (Bunch, 2001; LaRocque & Eigenbrood, 2005, Shogren & Rye, 2005). The Kessler Foundation and the National Organization on Disability commissioned Harris Interactive to conduct the 2010 Survey of Americans with Disabilities (http://2010disabilitysurveys.org/indexold.html). They conducted a national survey of 1,001 adults with disabilities and 788 adults without disabilities. Their data indicate that 50% of people with disabilities attend faith community services once per month, compared to 57% of people without disabilities. The percentage is lower (43%) for people with severe disabilities. These discrepancies have remained level at 7 to 8 percentage points since their 2004 survey, which suggests that there has not been any progress made in increasing participation in that time.

Although people with disabilities have a lower rate of participation in community activities in general, some researchers have found that participation in a faith community is one of the most common community activities in which they take part. Kleinert, Miracle, and Sheppard-Jones (2007) conducted a statewide survey of teachers of students with moderate and severe disabilities in a southern state and discovered that faith community activities were the most frequently reported community activity that students engaged in, with 65.5% of the teachers reporting that they had at least one student who attended faith community activities regularly. Boehm, Carter, and Taylor (2015) conducted a survey of 425 parents of children with ID and ASD and found that strength of religious faith was strongly associated with family quality of life satisfaction ratings. However, Shogren and Rye (2005) reported that even when people with ID attended services in faith communities, they often did not participate in religious education classes or social activities. This type of segregation may be more common in large

congregations, perhaps due to the fact that large congregations have enough members to compartmentalize them (Ault et al., 2013a). Segregated religious education classes prevent children with disabilities from having access to the same educational and social opportunities available to other members of the congregation. They also do not reflect the natural proportions of people with and without disabilities that occur in the community (Ault et al., 2013a).

Barriers to Inclusion

A survey conducted by McNair and Sanchez (2008) helps shed some light on the causes of the lack of inclusiveness in faith communities. McNair and Sanchez identified faith community leaders affiliated with the National Organization on Disability's Accessible Congregations Campaign in 44 states. Forty-one faith community leaders representing 11 denominations responded. The survey included questions about who people with disabilities were, why they existed, and how faith community programs served them. The data indicated that some members of faith communities expressed confusion regarding reasons for the existence of people with ID, whether they suffered as a result of their disability, and whether they were created to teach others lessons about life. Some clergy who responded to the survey indicated a belief that disability was the result of sin.

Turner, Hatton, Shah, Stansfield, and Rahim (2004) interviewed 29 adults with ID and three families in northwest England. The participants represented Christian, Islam, and Hindu dharma faith communities. They used a qualitative approach and conducted a semi-structured interview. The interview included two parts. The first part included questions regarding attendance in the participants' faith communities and descriptions of

the participants' faith. The second part included questions regarding prayer, home visits, service responses to religion, and social life in the faith community. The researchers determined that, although the respondents reported a desire to be more involved in their faith communities, the respondents said little was done to make their participation possible. They found little evidence that people with ID were being given valued roles in their faith communities.

Dennis and Murdoch (2001) interviewed over 30 people in the Catholic Archdiocese of Brisbane, Australia, including people with disabilities, parents, parish workers, volunteers, and human services workers in church agencies. The unstructured interviews examined attitudes, such as comfort, awareness, and understanding, regarding people with disabilities in the local parishes. Dennis and Murdoch found that barriers to inclusion in faith communities included faith communities that were closed institutional environments unwilling to change. Specifically, people with disabilities were expected to adapt to fit the faith community, rather than the community adapting to become more inclusive of people with disabilities.

Lack of inclusiveness takes many forms. In some cases, there is discomfort on the part of members of faith communities relative to the participation of people with ID in services or religious classes. For example, Minton and Dodder (2003) interviewed 35 people, including adults with disabilities ($n = 25$), their group home house managers ($n = 4$), and leaders in the churches they attended ($n = 6$) and found that members of the faith communities expressed fear at the idea of having people with ID serving in some capacity in the community. In one of the faith communities, adults with ID were placed in a segregated Sunday school class taught by a pre-school teacher. The teacher felt that the

adults with ID could have been integrated into age-appropriate classes, but other adults in the faith community resisted because they were uncomfortable with the idea. They described the behavior, grooming, and dress of people with ID as reasons for discomfort and fear on the part of faith community members.

Vogel, Polloway, and Smith (2006) conducted a literature review on barriers to inclusion and strategies to overcome them. They found instances of exclusive practices in faith communities, many of which were the result of uncertainty and fear on the part of members of faith communities regarding people with disabilities.

Inclusion Attempts

Although some faith communities have made efforts to include persons with disabilities (Collins & Ault, 2010), there has been a tendency for faith communities to offer segregated activities, such as separate religious education classes, for persons with disabilities (Collins, Epstein, Reiss, & Lowe, 2001). Collins and Ault (2010) described a faith community that tried to provide an alternative Sunday school class for a child with autism. The class included children without disabilities, but the parents of the child with autism were offended because efforts had not been made to make the regular Sunday school class accessible to their child. Subsequently, a committee was formed to increase overall awareness and inclusion of people with disabilities in the faith community. Howell and Pierson (2010) found that only two out of four mothers interviewed regarding their experiences with religious education classes reported that their children were in inclusive classes. One parent started an alternative class to serve the needs of her child. Although the class included typical peers, it took place in an alternative setting, apart

from other religious education classes. Another mother reported that her child no longer attended religious education classes.

Some faith communities offered occasional activities such as disability services or a dance for persons with disabilities (Collins & Ault, 2010). Although such activities may serve to bring persons with disabilities into the church building and help raise the awareness of disabilities in the faith community, they do not provide opportunities for authentic integration into the faith community. Wolfensberger (1984) states that one element of a valued life is membership in a faith community. He emphasizes that this not be a membership in a community primarily for people with disabilities, but one in which the person with a disability is assimilated into the general community.

Assimilation into a faith community is complex because there are differences in how members of the community experience inclusion. Slocum, Ault, and Collins (in preparation) conducted a survey of faith community leaders' perceptions on including people with disabilities in their communities. Over 70% of the faith community leaders indicated that they had no training on including people with disabilities. Those who had received training indicated that the training was minimal (e.g., several hours over 39 years as clergy) or came from experiences outside of the faith community or from experiences with people with disabilities in their own family.

Despite the lack of training on including people with disabilities in their faith communities, many of the leaders felt that their communities were welcoming to people with disabilities. In contrast, a survey by Ault, Collins, and Carter (2013a; 2013b) found that parents of children with disabilities felt that their faith communities were not welcoming. For example, while only 5% of faith community leaders felt that parents of

children had left their communities because they felt they were not welcomed, 32% of parents stated they left their place of worship because they felt their son or daughter were not welcomed. Similarly, over half of parents of children with disabilities refrained from participating in religious activities because the faith community did not provide necessary support, while only 12% of leaders felt that families had left for that reason. The results of the two surveys indicate a significant discrepancy between what faith community leaders perceive as a welcoming and inclusive attitude and the reality experienced by parents of children with disabilities. Vogel et al. (2006) also encountered discrepancies between faith communities' expressions of welcome and the actual hospitality offered to people with ID.

Recommendations

Faith communities face a challenge in dealing with the discrepancy between leaders' and parents' perceptions of inclusion. As an alternative to providing separate activities for persons with ID, faith communities can provide opportunities and support for people with ID to participate in regular activities. One way to increase participation would be to have people with ID participate in meaningful ways; however, they might need to be taught how to participate. Evidence-based teaching strategies can be used to teach activities that will increase their participation. Collins and Ault (2010) recommend providing spiritual accessibility to regular faith community activities by making modifications to materials to meet the needs of the persons with disabilities. In particular, children benefit from the use of evidence-based teaching strategies to make accommodations and modifications to existing religious education classes. Religious instructors can use methods such as multiple means of presentation (About UDL, n.d.;

Collins et al., 2001; 2008; Shogren & Rye, 2005), a system of least prompts (Collins et al., 2001), explicit instruction, and meaningful opportunities (Kleinert et al., 2007). Additionally, Carter, Boehm, Annandale, & Taylor (2016) suggest the use of an individualized religious or spiritual support plan, similar to an individualized education plan used in special education settings.

Additional evidence-based strategies that have been used in many educational settings to help with the acquisition of new skills and behavior are modeling and prompting. When models and prompts are included in instruction for students with ID, the opportunity for the student to make a correct response is increased (Collins, 2007). Modeling and prompting include the use of text, pictures, photographs, and video modeling and video prompting (Banda, Dogoe, & Matuszny, 2011; Collins, 2012). Video modeling (VM) consists of the student viewing a video of an entire sequence prior to completing a task. Video self-modeling uses the participant as the actor in creating the model. This method requires additional production time, since a recording is made of the self-model actor being coached through the task analysis. The video is edited to create a natural flow and to remove verbal cues given to the self-model actor during the coaching (Van Laarhoven, Zurita, Johnson, Grider, & Grider, 2009). Video prompting (VP) consists of a student viewing a video of individual steps of a task, stopping the video after each step, performing the step, and going on to view the next step (Collins, 2012). In recent years technology has been used to provide VM and VP on a variety of devices in many settings to increase the effectiveness and efficiency of interventions for people with ID (Banda et al., 2011).

In addition to the needs of children with disabilities regarding inclusion in religious services, Collins et al. (2001) has recommended that older students should have opportunities for interactions with members of their faith that can continue into adulthood. Special educators are particularly well suited to share their expertise with faith communities in developing accommodations. To that end, it is appropriate that special educators collaborate with faith communities (Ault, 2010).

Although there are several studies recommending the use of evidence-based strategies, a limitation in the literature is the lack of articles on the use of evidence-based instructional strategies in community activities, including faith communities. Goldstein and Ault (2015) used a variety of strategies (i.e., visual schedules, verbal prompts, first/then charts, planned breaks, visual cues, pictures instead of text, music, hands-on and adapted materials, and peer supports) to include a child with autism spectrum disorder (ASD) and his family in a Jewish synagogue. Baggerman, Ault, Collins, Spriggs, and Slocum (2015) describe a study in which a faith community volunteer was coached to use evidence-based strategies (i.e., opportunities to respond, behavior specific praise, and opportunities to participate) in a successful effort to include a child with ID in a religious education class. However, there are no other examples of evidence-based strategies used in faith community settings. Likewise, despite the success of VM and VP in teaching chained tasks (Collins, 2012), no examples of its use in faith communities have been found in the literature. Ault (2010) recommends that further empirical investigation of topics related to spirituality and religion should be done and published in special education literature. Those studies would help inform special education teachers

in the best ways to assist their students in participating in a meaningful social activity that

can benefit them into adulthood.

Chapter Two

Literature Review

Video modeling (VM) has been used in many educational settings to help with the acquisition of new skills. The literature contains several reviews of VM, either used alone or in conjunction with other strategies. Previous literature reviews indicate that most video modeling interventions ($n = 106$, 63%) included participants with autism spectrum disorder (ASD) and have been shown to be effective in the acquisition of target skills (Acar & Diken, 2012; Delano, 2007; McCoy & Hermansen, 2007; Shukla-Mehta, Miller, & Callahan, 2010). Less often ($n = 29$, 17%), VM has been used with people with ID (Kagohara et al., 2013; Mason, Davis, Boles, & Goodwyn, 2013). In these cases, VM was shown to be effective in increasing independent life skills for people with ID. Additionally, most VM studies included a limited age range, with participants typically under the age of 12 (Acar & Diken, 2012; Delano, 2007). There have been studies on the effectiveness of VM on the acquisition of a variety of target skills, including functional skills (Delano, 2007; Mason et al., 2013), academic skills (Prater, Carter, Hitchcock, & Dowrick, 2011), social skills (Acar & Diken, 2012; Delano, 2007; Shukla-Mehta et al., 2010), and communication skills (Acar & Diken, 2012; Delano, 2007; Shukla-Mehta et al., 2010).

Procedural Parameters in Previous Studies

There are various procedural parameters of VM described in the literature. Several literature reviews analyzed (a) the individual who acted as the model in the video, (b) the perspective used in creating the video models, and (c) the effectiveness of devices used to present the VM.

Model. A VM may use an adult model or a peer model. Video self-modeling (VSM) involves the participant themself modeling the target skill. Mechling (2005) analyzed studies that compared the effectiveness of instructor-created VM programs in teaching students with a variety of disabilities. She concluded that VSM was more effective than other video strategies. Similarly, Prater et al. (2011) analyzed studies that compared the effectiveness of VSM and VM and found that VSM was an effective intervention for improving academic performance. On the other hand, Shukla-Mehta et al. (2010) analyzed studies that compared the effectiveness of VSM and VM found that the model did not affect the acquisition of social and communication skills in by students with ASD.

Perspective. Another consideration in creating the video model is the perspective of the video. The video can be shot with either a spectator perspective or a subjective point-of-view (POV). Spectator perspective involves videoing a model performing the task so that the resulting video resembles watching a scene of the task being performed. POV shows the task being completed as it would look to the person performing the task. For example, a VM of a person washing dishes would show two hands performing the task. Mason et al. (2013) determined that a POV perspective was highly effective for increasing independent life skills for participants with ASD and ID. Mechling (2005) compared a variety of studies utilizing instructor-created VMs, including POV and spectator perspectives, and also found that a POV perspective was effective in studies involving functional and behavioral target skills.

Devices. Previous literature reviews included relatively few studies on the effectiveness of the devices used to present the videos. Mechling (2011) conducted a

literature review of the use of handheld electronic devices by persons with ID and ASD and found that such devices were beneficial in assisting those persons across a variety of skills and settings. She concluded that, with the increased availability and use of mobile technological devices such as iPods® and iPads®, video technology is becoming a more user-friendly option in presenting video modeling and prompting. Kagohara et al. (2013) conducted a literature review of the effectiveness of VM with handheld devices (i.e., iPods® and iPads®) and found that iPods® and iPads® were viable aids for people with ASD and ID. These, however, are the only literature reviews found that examined the use of portable electronic devices in teaching a variety of target skills.

Current Literature

Previous literature reviews examined some procedural parameters used in VM studies, but there is a lack of reviews offering a comprehensive look at procedural parameters, including the use of additional independent variables to supplement VM for people with ID. Additional independent variables that may be used to supplement VM include a system of least prompts, verbal prompts, model prompts, embedded instruction, verbal praise, and static picture and video prompts (Collins, 2013).

I have extended literature reviews on video modeling that have appeared in the literature and reviewed the most current literature (Slocum, in preparation). Fifty-four articles were identified and examined to determine (a) experimental design, (b) participant demographics, (c) target skill, (d) procedural parameters (e.g., presentation device, model, perspective, setting), and (f) whether studies identified as using VM to teach target skills to participants with ID used additional independent variables.

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Experimental design. All of the studies were single case research designs. These included multiple baseline across participants (MBP, *n* = 11, 20%), multiple probe across behaviors (MPB, *n* = 11, 20%), multiple probe across participants (MPP, *n* = 10, 19%), multiple baseline across behaviors (MBB, *n* = 4, 7%), and multiple baseline across participants and behaviors (MBP/B, *n* = 2, 4%). Ten of the studies (19%) used an alternating treatment (AT) design and three of the studies (6%) used a changing criterion (CT) design. One study each (2%) used AB, ABAB, and ABCAC designs.

Participant demographics. I analyzed participant demographics to determine (a) number and gender, (b) age, and (c) disability classification.

Number and gender. The 54 VM studies included a total of 169 participants. There were more males (*n* = 113, 67%) than females (*n* = 52, 31%). The gender of the four participants (2%) in one study (Avcioğlu, 2013) not specified.

Age. There were preschool-aged (*n* = 6, 1%), elementary school-aged (*n* = 29, 17%), secondary school-aged (*n* = 39, 23%) and adult (*n* = 22, 13%) participants.

Disability. Most of the articles included participants with ASD (*n* = 28, 52%) and ID (*n* = 25, 46%). Of these, six articles (11%) included participants with both ASD and ID. One article (2%; Cannela-Malone, Mizrachi, Sabielny, & Jimenez, 2013) included participants with multiple disabilities.

Target skill. The target skill in a majority of the VM studies (n = 30, 56%) was to teach functional skills (e.g., Cihak, Fahrenkrog, Ayres, & Smith, 2010; Hammond, Whatley, Ayres, & Gast, 2010; Norman, Collins, & Schuster, 2001; Plavnick, 2012). The most commonly taught functional skills included household tasks (*n* = 7, 23%) and food preparation (n = 6, 20%). Other functional target skills included using a handheld

electronic device (n = 5, 17%), self care (n = 4, 13%), transitioning between activities or locations (*n* = 3, 10%), using an ATM machine (*n* = 2, 7%), and developing gross and fine motor skills needed to do household chores (*n* = 2, 7%). Conyers et al. (2004) evaluated the effect of VM and in vivo practice on teaching compliance with dental procedures (3%).

Eight articles (15%) described the use of VM in vocational training. Four (50%) of those studies used VM to teach young adults with ASD to perform in inflatable mascot costumes. Burke, Allen, Howard, Downey, Matz, and Bowen (2013) used VM and VP to train young adults with ASD to work in the shipping department of a warehouse. Van Laarhoven, Van Laarhoven-Myers, and Zurita (2007) taught young adults with ID to work in a restaurant. Goh and Bambara (2013) taught adults with ID to work in a retail setting.

Six studies (11%) described the use of VM to teach leisure skills. Hine and Wolery (2006) used VM to teach toy-playing skills to preschool-aged children with ASD. Kleeberger and Mirenda (2010) taught a preschool-aged child to imitate hand and body motions to accompany songs. Mechling and Swindle (2012) investigated the effectiveness of VM on the acquisition of gross and fine motor skills required for children with ASD and ID to play with toys. Reagon, Higbee, and Endicott (2006) used VM to teach a preschool-aged child to engage in pretend play with his sibling. Blum-Dimaya, Reeve, Reeve, and Hoch (2010) taught adolescents with ASD the skills needed to play a video game. Cannela-Malone et al. (2013) used VM to teach adolescents with multiple disabilities to engage in physical activities (e.g., jumping rope, scooter board, running).

Five studies (9%) made use of VM to teach academic skills. Kagohara, Sigafoos, Achmadi, O'Reilly, and Lancioni (2012) used VM to teach elementary-aged students to use spellcheck. Moore, Anderson, Treccase, Deppeler, Furlonger, and Didden (2013) taught a kindergarten-aged child to write her name. Burton, Anderson, Prater, and Dyches (2013) taught adolescents to use an iPad to solve math problems involving money. Marcus and Wilder (2009) taught elementary students to identify Greek and Arabic letters. Taber-Doughty, Patton, and Brennan (2008) taught adolescents to locate books and DVDs in a library.

The purpose of four studies (7%) was to use VM to teach social skills. Two of those studies (50%; Avcioğlu, 2013; Williamson Casey, Robertson, & Buggey, 2013) taught children with ID to greet people. Dowrick and Ward (1997) taught self-control behaviors (e.g., using an alternate route to the laundry to avoid encountering children) to an adult with pedophilia. Tetreault and Lerman (2010) used VM to increase the conversational skills of young children with ASD.

One study (Smith, Hand, & Dowrick, 2014; 4%) used VM to teach communication skills. They used VM to teach various goals of a picture exchange communication system (PECS).

Procedural parameters. I examined the articles to determine the procedural parameters. Procedural parameters included (a) presentation device, (b) model, (c) perspective, and (d) setting.

Presentation device. Forty-nine (91%) of the 54 articles described the devices used to present VM and VSM. Several studies included the use of more than one type of device therefore, a total of 52 devices were described in the 49 articles. The most

commonly used devices were laptop computers (*n* = 14, 27%) and handheld electronic

devices (*n* = 14, 27%). Televisions were also utilized, with TV/VCR players used in six

(12%) studies and TV/DVD players used in four (8%) studies. Portable DVD players

were also used in four (8%) studies. Video models and self-models were shown on

desktop computers (*n* = 5, 10%) and tablet computers (*n* = 3, 6%). One study (2%;

Yakubova & Taber-Doughty, 2013) described the use of an interactive whiteboard. A

television was used in one study (2%) but the means of displaying the model was not

specified.

   Model. A variety of models were used to make the videos in the studies reviewed.

Because some studies used more than one type of model, there were a total of 59 models

represented in the 54 studies. The most commonly used models were adult (n = 23, 39%)

and self-models (n = 20, 34%). Six studies (10%) used peer models (e.g., Bidwell &

Rehfeldt, 2004; Kourassanis, Jones, & Fienup, 2015). The four studies (7%; Allen,

Burke, Howard, Wallace, & Bowen, 2012; Allen Wallace, Renes, Bowen, & Burke,

2010a; Allen, Wallace, Greene, Bowen, & Burke, 2010b; Burke et al., 2010) that taught

young adults to perform as costumed mascots used the mascot characters as models.

Reagon et al. (2006) used a sibling model (2%). Ohtake, Takeuchi, and Watanabe (2014)

used self-models to teach children to urinate without exposing their buttocks. When one

boy didn't respond to the self-model, Ohtake et al. made a VM that used the boy's

favorite character (i.e., tyrannosaurus rex) as the model. They defined this as a hero

model (2%). Four studies (7%) did not specify the type of model used.

   Perspective. Two perspectives were represented in the 54 studies: spectator and

POV. The most frequently used perspective in the VMs reviewed was spectator

perspective ($n = 23$, 43%). POV perspective was used in 16 (30%) of the studies (e.g., Shipley-Benamou, Lutzker, & Taubman, 2002; Shrestha, Anderson, & Moore, 2013). Twelve studies (22%) used a combination of spectator and POV perspective, with POV used to reinforce important steps (e.g., Allen, et al., 2010a; Van Laarhoven, & Van Laarhoven-Myers, 2006). The perspective was not specified in three (6%) studies (Alberto, Cihak, & Gama, 2005; Ayres, Maquire, & McClimon, 2009; Mechling, & Youhouse, 2012).

Setting. Several of the studies used multiple settings, so there were a total of 63 settings in the 54 studies. A majority of the studies were conducted in schools ($n = 38$, 60%). Fourteen (22%) of the studies took place in community settings. These included a factory ($n = 4$, 29%), retail establishments ($n = 2$, 14%), banks ($n = 2$, 14%), a library ($n = 1$, 7%), a dentist's office ($n = 1$, 7%), and a restaurant ($n = 1$, 7%). Three of the studies took place in more than one community setting. For example, Dowrick and Ward (1997) taught an adult with pedophilia to choose routes through the community that avoided the proximity of children, Purrazzella and Mechling (2013) taught adults with ID to use a handheld device to record their location when lost and send it to a family member for assistance, and Taber-Doughty, Miller, Shurr, and Wiles (2013) taught adolescents with ID to perform a series of tasks in a grocery store and bowling alley.

Effectiveness. I analyzed the effectiveness of the interventions in the studies, including (a) VM, (b) VSM, and (c) a comparison of VM, VSM, and other strategies.

Video modeling. The majority of studies ($n = 36$, 67%) used a VM procedure. All of the VM studies indicated that their interventions were effective in increasing the target behaviors. For example, two studies examined the effectiveness of VM to teach

adolescents to use handheld electronic devices (Kagohara, 2011; Kagohara et al., 2011) and found VM to be an effective intervention.

Video self-modeling. There were six articles (11%) that investigated the effectiveness of VSM. Three of the studies (50%) demonstrated a functional relation between VSM and acquisition of the target behavior or skill. Burton et al. (2013) found that use of VSM with a handheld electronic device increased math performance and allowed access to the core curriculum. Dowrick and Ward (1997) used VSM to teach a man with ID to avoid situations that might encourage pedophilia. They found that use of VSM resulted in an increase in self-reporting of fantasizing and changes in behavior to avoid problematic situations. Smith et al. (2014) found VSM to be effective in teaching two children and an adult to use a Picture Exchange Communication System (PECS).

The other three studies (50%) were not able to demonstrate a functional relation between VSM and the target behaviors or skills. Goh and Bambara (2013) found that their results varied across participants and tasks, with a range of 31.5-100% acquisition of chained vocational tasks. Ohtake et al. (2014) used VSM to teach elementary-aged boys to use a urinal without exposing their buttocks. One of the boys was able to learn the behavior with VSM alone. The other boy learned the behavior only after a hero model (i.e., tyrannosaurus rex) was incorporated into the video. Williamson et al. (2013) found that only one of three middle-school-aged students with ASD was able to learn to self-initiate greetings.

Comparison. There were twelve articles (22%) that compared VM, VSM, video prompting (VP), video peer modeling (VPM), or other strategies. Overall, the comparison articles demonstrated that all the variables were effective in increasing the target

behaviors or skills. However, some differences were noted. Marcus and Wilder (2009) found that VSM was more efficient than VPM in teaching novel letters, but Ozcan (2013) found both VSM and VPM to be equally effective in teaching first aid skills. Mechling et al. (2014a) found that VP was more effective in teaching functional skills than continuous VM or VM alone, while Taber-Doughty, Bouck, Kinsey, Jasper, Flanagan, and Bassette (2011) found VM to be more effective than VP.

In comparing VM to other strategies, Alberto et al. (2005) found that a static picture prompt (SPP) was slightly more efficient than VM in teaching ATM use, while Cihak (2011) found that participants were more likely to make successful transitions with VM than with a SPP. Mechling and Ayres (2012) and Mechling and Youhouse (2012) examined the effect of screen size in teaching fine motor skills to students with ASD and ID and found that while both large and small screen sizes were effective, a larger screen produced more correct responses and was more efficient for participants with ID.

Both Mechling, Ayres, Purrazzella, and Purrazzella (2012) and Mechling and Swindle (2012) examined the effect of VM on the acquisition of fine and gross motor skills in completing multi-step tasks. Mechling et al. found that VM was more effective in the acquisition of fine motor skills, while Mechling and Swindle found that VM was more effective in the acquisition of gross motor skills.

Additional Independent Variables

There were several studies in the current literature review that indicated that VM alone was not effective. Ayres et al. (2009) found that computer based video instruction, incorporating illustrations that mirrored in-vivo actions, increased performance in food preparation. Conyers et al. (2004) reported that five of the six participants in their study

required the use of in-vivo practice in addition to VM in order to increase compliance

with dental procedures. Lee, Anderson, and Moore (2014) used VM to toilet train a child

with ASD. Although the child was able to master five of the six steps in a task analysis,

he was unable to master the step of voiding in the toilet, which is a crucial step in toilet

training. Tetreault and Lerman (2010) were able to demonstrate the effectiveness of VM

to increase the conversational skills of two of the three participants in their study, but the

third required the addition of a system of least prompts (SLP) in order to do so.

Fifteen (27%) of the 54 articles identified in the current literature review

described the use of VM to teach target skills to participants with ID (Table 1). I

examined the 15 studies to determine whether they incorporated additional independent

variables to supplement the VM. Eight of the 15 studies (53%) used additional

independent variables. The most common independent variable used was a system of

least prompts (SLP, $n = 4$, 50%). Additional independent variables also included verbal

prompts (Mechling & Collins, 2012; $n = 1$; 13%), verbal and model prompts (Scott,

Collins, Knight, & Kleinert, 2013; $n = 1$; 13%), an embedded social skill and verbal

praise (Bidwell & Rehfeldt, 2004; $n = 1$; 13%), and static picture and video prompts (Van

Laarhoven et al., 2007; $n = 1$; 13%). The additional independent variables were

introduced when the participants were unable to independently complete a step in the task

analyses. In all of the studies, the additional independent variable resulted in the

participants meeting criterion.

System of least prompts. The most commonly used additional independent

variable, SLP, is a procedure in which the participant receives only the amount of

assistance needed to perform a correct response. The participant is given an opportunity

to perform a behavior independently. The trainer waits a predetermined response interval (e.g., 3 s) before prompting. A SLP has a minimum of three levels of prompts (e.g., gesture, verbal, physical) and prompts are delivered in a sequence of least to most assistance until the participant emits a correct response (Collins, 2013). Four articles used VM plus a SLP to teach target skills to participants with ID (Table 2). I analyzed the studies to determine (a) participant demographics, (b) target skill, (c) setting, and (d) effectiveness. Participant demographics included (a) number and gender and (b) age. All the participants were identified as having ID.

Participant demographics. The four articles that included VM plus SLP had a total of 14 participants. Nine of the participants (64%) were male and five were female (36%). Two of the studies included adolescents (Kagohara, 2011; Purrazzella & Mechling, 2013). Two of the studies included adults (Mechling et al., 2012; Taber-Doughty et al., 2013).

Target skill. All four studies had functional target skills. Kagohara (2011) and Purrazzella and Mechling (2013) used VSM plus SLP to teach adolescents with ID to use handheld devices. Mechling et al. (2012) used VM plus SLP to teach adults with ID the skills needed to complete household tasks. Taber-Doughty et al. (2013) used VM and SLP to teach adolescents to transition between tasks.

Setting. All four studies took place in school settings. Additionally, two studies included community settings. Purrazzella and Mechling (2013) taught participants to use cell phones to obtain assistance when lost in community. The participants were taught to use the cell phones in a school setting. Generalization probes were conducted in the community. Taber-Doughty et al. (2013) taught participants to transition between

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independent tasks in a school workroom and various community settings (i.e., bowling alley, grocery store).

   Effectiveness. All four studies reported that VM plus SLP were effective in achieving the target skills. Kagohara (2011) found that VSM plus SLP was effective in teaching students to use a handheld device for entertainment purposes. Mechling et al. (2012) used SLP if a participant did not meet criteria in 6 sessions. They found that VM plus SLP was effective in teaching fine and gross motor skills needed to complete household tasks (e.g., vacuuming, watering houseplants, filling salt shakers). Purrazzella and Mechling (2013) found that VM plus SLP were effective in teaching participants to use cell phones to obtain assistance when lost in the community. Taber-Doughty et al. (2013) found that VM plus SLP were effective in increasing independent task performance and task transition, as well as decreasing transition durations.

Discussion

   The purpose of this literature review was to examine the procedural parameters used in VM and VSM. A systematic search identified 54 studies. A majority of the studies found that the interventions, both VM and VSM, were effective. Additionally, VM plus SLP were also shown to be effective. The results indicate several factors that can influence the choice of VM or VSM, as well as the choice of additional independent variables. When designing video model interventions, there are a number of decisions that practitioners/researchers need to make.

   First, there are considerations regarding the participant demographics. A majority of the VM studies included participants with ASD, although VM also was effective in teaching target skills to participants with ID. In fact, when Mechling and Swindle (2012)

compared the effectiveness of VM with children with ASD and ID, they found that children with ID performed more tasks independently than the children with ASD.

Second, there are considerations regarding the target skills. Over half of the studies were designed to teach functional skills, while only six studies described the use of VM to teach leisure skills. The six studies that taught leisure skills involved teaching children to play with toys or games with their peers. None of the studies addressing leisure skills involved adults and none of them taught skills necessary for participation in community-based leisure activities, such as participation in a faith community. Given the importance of inclusion in community activities as an aspect of quality of life (AAIDD, 2009; TASH, 2000), future research should include target skills necessary for participation in community-based leisure activities.

Third, there are considerations regarding procedural parameters used in making the VM, including the presentation device, model, perspective, and setting. Over half of the studies used laptop computers and handheld devices to present the VM. These devices provide more flexibility in teaching target skills because they can be used in a variety of settings. Handheld devices, including tablet computers, are particularly beneficial if a VM is to be used in a community setting, since they are relatively unobtrusive and can be easily carried into most settings. Future research should continue to explore the use of handheld devices in the community.

One third of the studies successfully used self-models. However, there is time and cost involved in producing a VSM. Williamson et al. (2013) found that it typically took 3 weeks to make VSM and cost more due to the editing programs needed to create a model of the desired skill. Van Laarhoven et al. (2009) also found that VSMs were expensive to

produce and were less effective than VM or POV perspectives. These data indicate that it is possible to create an effective VM procedure with less time and expense, an important consideration for settings with limited financial resources. Peer models were found to be as effective as self-models (Marcus & Wilder, 2009; Ozcan, 2013). Therefore, peer models are a viable option to VSMs, reducing the cost and time required to make self-models. Reagon et al. (2006) found that a sibling was an effective model in teaching pretend play. Another possibility is the use of a hero model. Only one study (Ohtake et al., 2014) made use of a hero model when a participant was unable to acquire the target skill with VSM alone. Similarly, adult models were used effectively in over a third of the studies, providing an option when working with adult subjects. Future studies could further investigate the use of peer, sibling, adult, and hero models, which could prove as effective as self-models while reducing time and cost.

Another decision is whether to use a spectator or POV perspective. Van Laarhoven et al. (2009) found that both spectator and POV perspective were effective. An advantage of POV perspective is that the participant sees the target skill from the perspective of performing it, which may be beneficial, especially for tasks involving fine motor skills. Spectator and POV perspectives can be combined, with POV used to emphasize important details in the task analysis. Future research should continue to explore this option.

A majority of studies took place in a school setting. While this is an appropriate setting for the acquisition of academic skills, the emphasis on transition and quality of life across the lifespan (AAIDD, 2009; TASH, 2013), makes it important to conduct research on the use of VM in all the settings people with ID may encounter. More studies

in varied settings will continue to provide options for people with ID across their lifespan. In particular, the literature does not contain examples of studies conducted in community settings such as faith communities, which some researchers have found to be one of the most commonly accessed community settings for people with ID (Kleinert et al., 2007).

Finally, one must consider the use of additional independent variables. The most frequently used additional independent variable in the articles included in this literature review is a SLP. However, this accounted for only four (7%) of the studies included in this review. Therefore, the literature would benefit from further studies analyzing the effect of VM plus SLP on the acquisition of behaviors by people with ID.

Research Questions

This study extends the literature because there is lack of research using evidence-based practices to teach the skills necessary for participation in community activities. The purpose of this dissertation was to examine the use of evidence-based practices in teaching people with ID to participate in a community activity, specifically within a faith community. The research questions were as follows:

1. Is a VM plus a SLP effective in teaching people with ID tasks within a faith community setting outside of regular faith community services or activities?

2. Will particular tasks taught in a faith community setting outside of regular faith community services or activities generalize to regular faith community services or activities?

Table 1.

Design, procedural parameters, and effectiveness of video modeling articles including people with ID

Citation	Design	Target Skill	Additional Independent Variable	Effectiveness of Additional IV
Avcioğlu (2013)	MPP	SOC (greeting)	None	N/A
Bidwell & Rehfeldt (2004)	MBP	FUNC (coffee & interaction)	Embedded social skill Verbal praise	Mastered all steps in target skill Mastered embedded social skill
Conyers et al. (2004)	MBP	FUNC (dentist)	In vivo practice	Desensitization to dentist 1 with VM only, 5 with VM and IV
Dowrick & Ward (1997)	MPB	SOC (pedophelia)	None	N/A
Hammond, Whatley, Ayres, & Gast (2010)	MPP	FUNC (handheld device use)	None	N/A
Kagohara (2011)	MPP	FUNC (handheld device use)	System of least prompts	Learned to use handheld device
Kagohara et al. (2011)	MPP	FUNC (handheld device use)	None	N/A
Mechling, Ayres, Purrazzella, & Purrazzella (2012)	MPB	FUNC (household tasks)	System of least prompts	All participants performed skills at criterion levels with VM and SLP
Mechling, Ayres, Purrazzella, & Purrazzella (2014)	MPB	FUNC (household tasks)	None	N/A
Mechling & Collins (2012)	MPB	FUNC (household tasks)	Verbal cuing	All participants performed skills at criterion levels
Mechling, Gast, & Gustafson (2009)	MPB	FUNC (cooking fires)	None	N/A
Purrazzella & Mechling (2013)	MPP	FUNC (handheld device use)	System of least prompts	Increased correct performance of steps.
Scott, Collins, Knight, & Kleinert (2013)	MPP	FUNC (ATM use)	Verbal prompts	All participants performed the skill at criterion levels
Taber-Doughty, Miller, Shurr, & Wiles (2013)	MBS	FUNC (transition)	System of least prompts	Learned to use HH for transition between independent tasks
Van Laarhoven, Van Laarhoven-Myers, & Zurita (2007)	MBB&P	VOC (restaurant)	Static picture prompt Video prompt	Both reached criterion

Note. MBP = multiple baseline across participants; MBB = multiple baseline across behaviors; MPP = multiple probe across participants; MPB = multiple probe across behaviors; MBS = multiple baseline across settings; VOC = vocational skills; SOC = social skills; FUNC = functional skills; NS = not specified; VM = video model; IV = in vivo practice; SLP = system of least prompts; HH = handheld electronic device

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Table 2.

Video modeling plus a system of least prompts in studies including people with ID.

Citation	Participants		Target Skill	Setting	Effectiveness
	N/gender	Age			
Kagohara (2011a)	1/M, 2/F	15-19	FUNC (handheld device use)	SCH	VSM plus SLP effective in teaching students to use a handheld device for entertainment
Mechling, Ayres, Purrazzella, & Purrazzella (2012b)	4/M	29-35	FUNC (household tasks)	SCH	SLP used if criteria not met in 6 sessions, VM plus SLP effective in teaching fine & gross motor skills to do household tasks
Purrazzella & Mechling (2013)	2/M, 1/F	24-29	FUNC (handheld device use)	SCH COMU	VM plus SLP effective in teaching participants to use cell phones to obtain assistance when lost in community
Taber-Doughty, Miller, Shurr, & Wiles (2013)	2/M, 2/F	16-18	FUNC (transition)	SCH COMU	VM plus SLP effective in increasing independent task performance and task transition and decreasing transition durations

.

Note. FUNC = functional skills; SCH = school; COMU = community; VM = video modeling; VSM = video self-modeling; SLP = system of least prompts.

Chapter Three

Method

In the current study, I evaluated the effect of VM plus a SLP on the acquisition of chained tasks in a faith community by youth and adults with intellectual disability. After recruiting participants for the study, I identified the specific tasks required in order for each participant to participate in his or her particular faith community services. Tasks included the behaviors needed to attend services, serve at altar, and recite blessings and prayers in a synagogue.

Participants

Criteria for inclusion in the current study included (a) having a diagnosis of ID, or an ID in addition to autism; (b) regularly attending a faith community; (d) expressing the desire to participate in a faith community activity; and (e) having the ability to hold or manipulate objects used for participation in the faith community (e.g., communion elements, processional cross, prayer shawl).

Religions included in the study were (a) Christian (Episcopal), (b) Christian (Roman Catholic), and (c) Jewish. Initially, I also recruited members of an Islamic faith community and developed task analyses, but they were unable to begin the study due to family illness and scheduling conflicts.

I obtained specific information regarding the characteristics of the faith communities through interviews with faith community leaders and members. Episcopal and Roman Catholic churches are liturgical churches. The services follow a prescribed pattern that is highly symbolic and includes specific processions, movements, gestures, vestments, and prayers conducted in a church. Jewish services also follow a prescribed

pattern that is symbolic and includes specific movements, gestures, clothing, and prayers conducted at home or in a synagogue.

I solicited five participants from organizations serving people with intellectual disabilities and their families and from faith communities in a city with a population of 300,000 in a southeastern state. Three of the participants were able to complete the study. Table 3 provides a summary of the participants who completed the study. Academic scores for the participants were not available since the study took place in the community.

Jack. Jack was a 23-year old male identified with autism and moderate ID. He lived at home with his parents and one brother. Jack received special education services in the public schools and attended school until he was 21. After completing high school, Jack worked part time doing office tasks in the College of Nursing of a university in his city, where he performed his duties while under the supervision of a daily caregiver. The caregiver also provided assistance with activities of daily life, hippotherapy, and a bowling league. Jack was verbal, but tended to be echolalic, so questions had to be repeated in several ways in order to get an accurate response. He was able to travel independently through familiar settings, such as his school in the church, but was unable to travel in the community by himself. Jack had a history of eloping, so his parents had an alarm on the doors of their home; however, this behavior had decreased as he reached adulthood. Jack was able to tend to some activities of daily living independently, such as toileting, but needed assistance with transportation and preparing food.

Jack's family joined St. George's Episcopal Church after experiencing difficulty having Jack included in the Roman Catholic Church they attended. They attended

services infrequently because, although Jack was welcomed at St. George's, his parents expressed concern about his behavior during services. Jack occasionally exhibited behaviors that interfered with his ability to attend to an entire church service. For example, he sometimes made loud vocalizations and occasionally engaged in mild self-injurious behaviors (SIB), such as biting his hands. He sometimes wore bicycling gloves to block the SIB and used a chew tube to provide a replacement behavior. The goal for Jack was to learn the routine of a typical Episcopal service in order for him to attend a service without incident.

Marie. Marie was a 16-year old female identified with Down syndrome and moderate ID. She lived at home with her parents and two sisters. Marie was home-schooled. Prior to being home-schooled, Marie attended a Roman Catholic parochial school. In addition to her courses, Marie participated in activities such as dance class and serving as the manager of a local college's women's soccer team. She was recently asked to serve as an intern for her dance instructor with the possibility of a paid position. Marie was verbal and socially outgoing, able to express the fact that she wanted to participate in the services at her church.

Marie's family was lifelong Roman Catholics and members of a congregation located in the Newman Center affiliated with a university in their city. The family attended Sunday Mass on a weekly basis as well as occasional weekday services. Marie was familiar with the services, and expressed a desire to become a server, like another young woman with Down syndrome in the congregation.

Reuben. Reuben was a 12-year old male identified with autism and moderate ID. His parents were divorced and he spent most of the week with his mother and Tuesday

nights and alternate weekends with his father and stepmother. He received special education services in the public schools and had recently completed sixth grade. Although Reuben was verbal, he rarely initiated conversations, but would respond when spoken to. He tended to speak softly and was difficult to understand at times. Reuben had a history of running away when he was younger, but no longer displayed that behavior. He enjoyed spending time in his yard, particularly on the trampoline, and was able to do so without supervision. He was able to perform some activities of daily living independently, such as dressing and toileting, but needed assistance with other activities, such as transportation and preparing food. He enjoyed computers and videos, especially Disney movies, and was skilled at navigating through websites to watch videos. Reuben received applied behavior analysis therapy in both home settings. Additionally, he received music therapy at his father and stepmother's house. He played the euphonium as part of his music therapy and was a member of his middle school band, where he was able to participate in the school concert without support.

Reuben's father and stepmother had converted to Judaism 5 years previously and were members of Mikveh Yisra'el Synagogue, where they attended services four times per month. Reuben's brother had recently made his Bar Mitzvah and Reuben and his parents wanted Reuben to learn Jewish blessings and prayers that would be used in services as well as in preparation for his own Bar Mitzvah.

A'ishah and Zayan. A'ishah and Zayan were female and male adult siblings, respectively, with developmental disabilities. Their family was originally from Iran. A'ishah and Zayan lived at home with their parents and attended a day program for adults with developmental disabilities. Their family attended services at an Islamic Center

affiliated with a university in their city. Their parents wanted them to learn the steps in reciting Islamic prayer. A'ishah and Zayan were unable to begin the study due to family illness and scheduling conflicts.

Setting

Baseline, intervention, maintenance, and generalization phases were conducted in the faith community of each participant for the Christian participants. Baseline, intervention, and maintenance phases for the participant in the Jewish community were conducted in the participant's home and the generalization probe was conducted in the synagogue.

When baseline and intervention phases were conducted in a faith community, they did not take place during regular faith community services or activities in order to avoid disturbing services or activities with sounds related to the VM, verbal cues and praise, and the prompt sequence, as well as movement during the intervention. The training took place in an empty setting, with additional people included only if necessary for providing stimulus prompts. For example, another person assuming the role of the priest accompanied the participant learning to be a server during a Roman Catholic Mass. Generalization and maintenance probes were conducted during regular worship services or settings. Diagrams of the settings for each intervention are included in Appendix A.

Materials

I created VMs incorporating all steps in the task analyses as the VM for each of the task analyses. The VMs were recorded with an iPad® and were recorded from a spectator perspective, in which the actor performing the task is seen as though watching a person perform the task, with some scenes recorded from a point-of-view (POV)

perspective in order to emphasize certain details. For example, a VM of an actor carrying a processional cross was recorded from a spectator perspective, but when the actor reached a stand into which the cross was inserted, the perspective shifted to POV to emphasize hands inserting the base of the cross into the stand. The videos were edited with iMovie® software to include titles and transitions, and played back on an iPad® during the intervention condition. Jack's videos were about 2–6 m long, Marie's videos were about 2-3 m long, and Reuben's videos were about 30 s to 1 m long.

The actors used for the VMs were persons of the same age and gender as the participant, or someone familiar to the participant. Jack's VM actor was his daily caregiver, Marie's VM actor was a female young adult with Down syndrome, and Reuben's VM actor was a female peer at his synagogue who also served as his mentor.

Additional adults were incorporated as actors in the VMs. In Jack's VMs, a lay Eucharistic minister played the part of the priest. In Marie's VMs, the portions of the service that included a priest were recorded during an actual service with one of the parish priests celebrating the service. In Reuben's blessing VM, his rabbi performed his usual duties prior to the Torah reading and Reuben's father was the actor for POV perspective scenes.

In addition to the video models, I utilized additional materials for each intervention. Jack's interventions included bulletins, a processional cross, chalice, paten, and crackers (to simulate communion hosts). Marie's intervention included an alb, cincture, processional cross, service book, chalice, communion cup, corporal, purificators, altar cross, water cruets, lavabo bowl, and lavabo towel. Reuben's interventions included a talis, kippah, and laminated prayer cards. With the exception of

Reuben's laminated prayer cards, the materials were the exact materials used in typical

services in each of the faith communities represented. Reuben's prayer cards were

designed to replicate prayers in the service books in the synagogue and posted on the

table where the Torah readings took place. A glossary of items and terminology is

included in Appendix B.

Independent Variable

The independent variable was a video model of each task plus a SLP procedure.

The video models presented all steps in each task analysis. The video models were

presented one time at the beginning of each intervention trial. Immediately after viewing

the VM, the participant was given the direction, "Now you try it." If the participant did

not respond to the task direction or the completion of the previous step within 3 s, I

corrected each mistake by using correct prompt sequence as a response cue. The

hierarchy of the SLP included gestures, verbal prompts, and physical prompts. If the

participant did not respond to a prompt within 3 s, I used the next level of prompt. Total

task format was used.

Dependent Variables

The dependent variable was the number of steps performed correctly and

independently. I developed three task analyses for each participant, using the interests of

the participants and behaviors needed to complete the tasks in the specific faith

communities to determine the specific tasks for each of the participants. I developed the

task analyses by observing an experienced person performing the task multiple times.

For purposes of Jack's task analyses, the church service was divided into three

sections: (a) gathering, including entering the church and opening prayers; (b) Liturgy of

the Word, including readings, sermon, and passing the peace; and (c) Liturgy of the Table, including the Eucharistic prayers and communion. The task analyses for Jack are presented in Table 4. For purposes of Marie's task analyses, the Mass was divided into three sections: (a) opening procession, including putting on vestments, carrying the processional cross, and opening prayers; (b) communion, including preparing the altar for communion; and (c) closing procession, including post-communion prayers, carrying the processional cross, and removing vestments. The task analyses for Marie are presented in Table 5. For purposes of Reuben's task analyses, the behaviors were divided into (a) talis, which included the ritual gestures and blessings associated with putting on a prayer shawl; (b) blessing, which included the blessings recited before and after a Torah reading; and (c) Shema, which included gestures and vocal variations associated with reading a Hebrew prayer. The task analyses for Reuben are presented in Table 6.

Data Collection

Observers stood or walked behind the participants as they performed each task and recorded participant performance data. A correct response was defined as an independent, accurate response within 3 s of the task direction or the completion of the previous step. An incorrect response was defined as the participant not initiating a step within 3 s of the task direction or completion of the previous step or pausing for 3 s or more while performing the step. During the intervention phase I corrected each mistake by using the prompt hierarchy in a least-to-most sequence as a response cue. The hierarchy of the SLP included gestures, verbal, and physical.

Probe. Data were collected using a single opportunity probe format (i.e., the session ended after the participant made one mistake or did not respond; Collins, 2012)

during baseline probe sessions. I used a task analytic data recording method, using a combined data collection sheet and graph (Ault & Bausch, 2014).

During baseline sessions, I recorded responses as correct (+), incorrect (-), or no response (0). A correct response was defined as an independent, accurate initiation within 3 s of the task direction or the completion of the previous step. The time required to complete each step was dependent on the task being performed in each step. For example, the participant learning the Gathering task analysis (Figure 1) required 45 s to complete the first step (i.e., enter the building and walk across the narthex), but only required 3 s to complete the fifth step (i.e., bow before sitting in pew). A correct response was recorded when the participant initiated a step within 3 s of the task direction or the completion of the previous step, and (a) paused for less than 3 s while performing a step (i.e., correct duration), (b) correctly completed the step within 3 s of the initiation (i.e., correct topography), and (c) completed the step within 3 s of the initiation in the correct sequence.

An incorrect response was recorded when the participant initiated a step within 3 s of the task direction or completion of the previous step, but (a) paused for 3 s or more while performing the step (i.e., incorrect duration), (b) completed a step without pausing for more than 3 s, but incorrectly completed the step (i.e., incorrect topography), or (c) completed a step without pausing for more than 3 s, but not in the correct sequence. No response was recorded when the participant did not initiate a step within 3 s of the task direction or the completion of the previous step or if the participant asked for assistance before initiating the step.

Intervention. Data were collected using task analytic recording during

intervention, generalization, and maintenance probe sessions (i.e., I corrected each

mistake by using correct prompt sequence if no response within 3 s of the task direction

or the completion of the previous step). I recorded responses as correct (+) or recorded

the type of prompt delivered: gesture (G), verbal (V), or physical (P). A correct response

was defined as an independent, accurate initiation within 3 s of the task direction or the

completion of the previous step. The time required to complete each step was dependent

on the task being performed in each step. An incorrect response was defined as the

participant initiating a step within 3 s of the task direction or completion of the previous

step, but (a) displaying incorrect duration, (b) displaying incorrect topography, or (c)

completing a step without pausing for more than 3 s, but not in the correct sequence. No

response was defined as the participant not initiating a step within 3 s of the task direction

or the completion of the previous step or the participant asking for assistance before

initiating the step.

If a participant responded incorrectly or did not respond, I corrected each mistake

by using the prompt hierarchy. The first prompt in the hierarchy was a gestural prompt.

For example, I would point at the object to be picked up, the direction in which to walk,

or I would gesture when to stand or sit. A correct response at the gesture prompt level

was defined as accurate initiation within 3 s of the prompt. If the participant responded

incorrectly or did not respond to the gestural prompt, I provided the second prompt in the

hierarchy. The second prompt was a verbal prompt. For example, I would verbally

instruct the participant to pick up an object, walk in a certain direction, stand, or sit. A

correct response at the verbal prompt level was defined as accurate initiation within 3 s of

the prompt. If the participant responded incorrectly or did not respond to the verbal prompt, I provided the third prompt in the hierarchy. The third prompt was a physical prompt. For example, I would hand the participant an object or lead them by the hand in the correct direction. The physical prompt was the controlling prompt. An example of a data collection sheet for a Jack's gathering task analysis is included in Appendix C.

Interobserver Agreement

A doctoral candidate, certified by the Collaborative Institutional Training Initiative (CITI Program) in human subjects research, independently collected data on the number of correctly performed steps for at least 20% of baseline, intervention, generalization, and maintenance trials (Ayres & Ledford, 2014). Training sessions were conducted by having the observer watch and score a video of an experienced person performing each of the task analyses multiple times, with and without errors. The observer was considered trained once she reached 90% agreement over three video sessions (Ayres & Ledford, 2014). Interobserver agreement (IOA) was calculated using the point-by-point method in which the number of observer agreements was divided by the number of intervals agreed plus the number of intervals disagreed and multiplied by 100 (Ayres & Ledford, 2014). An IOA of at least 80% was considered acceptable. In the event that interobserver agreement fell below 80%, the trainer and the second observer reviewed observation criteria in order to determine errors. The IOA was recorded on a combined IOA/Procedural Reliability form. The IOA form for baseline and probes is included in Appendix D. The IOA form for intervention is included in Appendix E.

Procedural Reliability

A doctoral candidate, certified by the CITI Program in human subjects research, independently collected procedural reliability data for at least for 20% of baseline, intervention, generalization, and maintenance trials (Ayres & Ledford, 2014) via a checklist utilized concurrently with the interobserver agreement data. The checklist for baseline probe sessions included (a) providing an attentional cue, (b) ensuring an attentional response, (c) recording the participant's response, (d) ending the session if the participant made an error, and (e) thanking the participant for participating. The checklist for intervention sessions included the investigator behaviors of (a) providing an attentional cue, (b) ensuring an attentional response, (c) showing the VM, (ensuring an attentional response during the VM), (d) providing the task direction, (e) waiting 3 s for a response, (f) using the correct prompt sequence if there is no response within 3 s, and (g) providing the correct consequences (e.g., verbal praise), (g) recording the participant's response, and (h) thanking the participant for participating. Procedural reliability was calculated by dividing the total number of behaviors observed by the total number of planned steps and multiplying by 100% (Gast & Ledford, 2014). Procedural reliability of at least 80% was considered acceptable. In the event that procedural reliability fell below 80%, the trainer and the second observer reviewed observation criteria in order to determine errors. The IOA was recorded on a combined IOA/Procedural Reliability form. The IOA form for baseline and probes is included in Appendix D. The IOA form for intervention is included in Appendix E.

Social Validity

I obtained social validity data in order to determine the social significance of the

dependent variable and the importance of the change in the dependent variable as a result

of the intervention (Gast, 2014; Gast & Ledford, 2014). The data were collected via

interviews administered to one participant (Appendix E), parents or caregivers, faith

community leaders, and members of the faith communities (Appendix F). The interviews

were conducted after generalization probes, when faith community leaders and members

of the faith communities had an opportunity to observe the participants performing the

chained behaviors. I asked questions about the respondents' perceptions of the

participants' ability to perform the specific behaviors and the importance of including

people with ID in faith community services or activities. I also asked them to reflect back

to their perceptions about having a person with an ID perform the specific behaviors and

the importance of including people with ID in faith community services or activities prior

to the study.

Procedures

Baseline. Baseline data were collected using a single opportunity probe format

(i.e., the session ended after participant made one mistake or did not respond; Collins,

2012). I chose this format instead of a multiple opportunity probe because of the

possibility of actually teaching steps in the task analysis when the participant responded

incorrectly or did not respond. For example, if Jack did not respond to a step in the task

analysis that required him to walk to the front of the church, I could not complete the step

for him without providing an opportunity to learn the step during the probe. Baseline data

were collected for a minimum of five sessions without use of instruction or modeling.

The task analyses for Jack are presented in Table 2, the task analyses for Marie are presented in Table 3, and the task analyses for Reuben are presented in Table 4. The baseline trial sequence for a task analysis was:

(1) The trainer used an attentional cue to ensure the participant was ready to begin (e.g., "Are you ready?").

(2) If the participant did not give an attentional response (e.g., nodding or stating, "yes."), the trainer repeated the attentional cue.

(3) When the participant gave an attentional response (e.g., nodding or stating, "yes."), the trainer gave a verbal instruction to initiate the first task (e.g., "Show me how to get ready for prayer.").

(4) The trainer recorded the participant responding to the verbal instruction to initiate the first step in the chain. If the participant performed the first step correctly, the trainer recorded the correct response (+).

(5) The correct response to the first step in the chain served as the antecedent prompt for the next step in the chain. If the participant performed the step correctly, the trainer recorded the correct response (+).

(6) The correct response to each subsequent step in the chain served as the antecedent prompt for the next step in the chain. If the participant performed the step correctly, the trainer recorded the correct response (+).

(6) If the participant completed all steps correctly, the trainer thanked the participant and ended the session.

(5) If the participant did not complete a step correctly, the trainer recorded an incorrect response (-) or no response (0). If the participant made an incorrect or no response, the trainer stopped the session and thanked the participant for participating.

Intervention. Once a stable or nontherapeutic trend was demonstrated in baseline, intervention began, using a total task format during intervention (i.e., if the participant did not respond to the task direction or the completion of the previous step within 3 s, the trainer used the prompt sequence). Intervention consisted of having the participant view a VM on an iPad® one time immediately prior to the task. The VM was a video of an experienced person performing the task. The author served as the trainer during the intervention sessions.

Performing each step in the chained task was the stimulus for the next step. For example, if the participant was learning to put on a Talis (prayer shawl), the first step (i.e., "Pick up talis and hold with both hands in front.") served as the discriminate stimulus for the second step (i.e., "Recite 'Barukh atah Adonai...'"). If the participant did not begin the task within 3 s of the discriminate stimulus, the trainer used the prompt hierarchy as a response cue. The prompt sequence hierarchy included gestures, verbal prompts, and physical prompts.

The intervention trial sequence for a task analysis was:

(1) The trainer used an attentional cue to ensure the participant was ready to begin (e.g., "We are going to practice being a server today, are you ready?").

(2) If the participant did not give an attentional response (e.g., nodding or stating, "yes."), the trainer repeated the attentional cue.

(3) When the participant gave an attentional response (e.g., nodding or stating, "yes."), the trainer gave a verbal instruction to initiate the intervention (e.g., "Watch this video about what a server does at the beginning of the Mass.").

(4) Once the participant indicated, either verbally or nonverbally, that they were ready to proceed, the trainer started the VM.

(5) If the participant became distracted (e.g., looking away from the VM) during the video, they were reminded to watch the video and were given verbal praise for viewing (e.g., "You did a good job paying attention to the video.").

(6) Immediately after viewing the video, the participant was directed, "Now you do it."

(7) For each step that the participant completed correctly in the chained task, the trainer praised the participant with behavior specific praise (e.g. "Good job waiting during the hymn.").

(8) The trainer recorded a correct response (+) if the participant responded correctly. The trainer also praised the participant with behavior specific praise (e.g. "Good job of putting the cross in the stand.").

(9) If the participant performed an incorrect response, the trainer interrupted the behavior, and provided the next prompt in the prompt sequence. The prompts in the hierarchy were specific to the task at hand and included gestures (e.g., pointing to an object to be picked up or pointing in the direction in which the participant was to move), verbal cues (e.g., asking what comes next or telling the participant what to do), and physical cues (e.g., taking the participants hand and guiding it to an object or leading the

participant in the direction in which the participant was to move). The trainer then

recorded the type of prompt delivered: gesture (G), verbal (V), or physical (P).

(10) If the participant did not complete 100% of the steps correctly in the chained

task during the first trial, the video was viewed again and the participant was given an

additional trial. This sequence was repeated for a total of up to four trials per session.

(11) If the participant completed 100% of the steps independently during practice,

they were given the opportunity to perform the behavior again, for up to four trials per

session. Criterion for the intervention phase was performing 90% of the steps

independently during five consecutive intervention probe trials. For example, Marie's

task analysis for the opening procession had 14 steps, so criterion was 12.6 steps, while

Reuben's task analysis for the talis had 7 steps, so criterion was 6.2 steps. I determined

that 90% was adequate for successful participation in each faith community activity

because there was the opportunity for natural cues and gestural or verbal prompts by

clergy or family members during each of the activities.

(12) Once the participant reached criterion on the first behavior, intervention was

introduced on the second behavior. Intervention on the second behavior was conducted in

the same manner as the first behavior. This sequence was repeated for the third behavior.

Generalization and maintenance. When the participants reached criterion on all

three behaviors, generalization and maintenance probes were conducted concurrently. I

conducted the generalization probes exactly as baseline procedures with several

exceptions. The probes took place in an actual faith community service or setting. For

example, if the training took place in the faith community (i.e., church for Jack and

Marie), the generalization probes took place in the same setting as the training, but

included all elements of a typical faith community worship service or activity, such as other worshipers, faith community leaders, and music. If the training took place in a setting other than the faith community (i.e., home for Reuben), the generalization and maintenance probes took place in the faith community (i.e., synagogue). The summer schedule of the synagogue during the study prevented conducting the generalization probe during a service.

I used a verbal cue to alert the participant to begin the chained task. Alternatively, a member of the faith community involved in the service or activity delivered the verbal cue. For example, if the chained task was to perform the blessing before and after the Torah reading, the verbal cue was the Rabbi calling the participant to come to the table. The response to this stimulus was to stand up from the pew and walk to the table. Performing this step was the stimulus for the next step, touching the fringe of the Talis to the page of the Torah. Each step in the chained task served as the discriminate stimulus for the next step. Observers monitored each participant's response to the steps in the task analyses and marked responses as correct (+) or incorrect (-).

Experimental Design

This study used multiple probe (days) across behaviors design (Gast, Lloyd, & Ledford, 2014) to analyze the effect of the video modeling and a system of least prompts on participation in faith communities for persons with ID. The experimental design was replicated across 3 participants and settings in different faith communities. There were four experimental conditions: (a) baseline, (b) intervention, (c) generalization, and (d) maintenance.

I conducted a minimum of five one-to-one baseline probes for each participant prior to introduction of the independent variable. I then visually analyzed the data and, when a stable or decreasing trend in the data via visual inspection of the graphs occurred, I began intervention with the instruction. When the data for the first intervention indicated that the participant had reached criterion, I began consecutive probes on the second behavior. When the consecutive probes on the second behavior demonstrated a stable or decreasing trend, I began the second intervention. The procedure continued until all behaviors were taught. Experimental control was demonstrated for each participant when their behavior changed when and only when the independent variable was applied.

Data Analysis

The resulting data for the three task analyses were entered on a three-tier graph. The researcher used visual analysis of resulting graphs (Gast & Spriggs, 2014) to determine whether to proceed with or introduce new conditions. Data for the prompt levels were also entered onto graphs with corresponding tables listing the number and type of prompt for each step in each task analysis (Ault & Griffen, 2013).

Table 3.
Participant demographics.

Participant	Gender	Age	Ethnicity	Primary Disability	Secondary Disability	Faith Community
Jack	M	23	Caucasian	Moderate ID	Autism	Christian (Episcopalian)
Marie	F	16	Caucasian	Moderate ID	Down syndrome	Christian (Roman Catholic)
Reuben	M	12	Caucasian	Moderate ID	Autism	Jewish

Table 4.

Task analysis for Episcopal service (Jack).

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Gathering
1. *Enter church.* Enter the church building and walk across the narthex.
2. *Get bulletin.* Walk to the usher and take a bulletin.
3. *Sign of the cross.* Come into the sanctuary. Dip fingers in the water in the stoop and make the sign of the cross.
4. *Go to pew.* Walk down the aisle to a pew.
5. *Bow.* Face the altar and bow.
6. *Sit.* Enter the pew and sit down.
7. *Prelude.* Sit quietly and listen to the music being played or sung before the service.
8. *Stand for procession.* Stand as the crucifer, acolytes, choir, liturgical ministers, and priest walk down the aisle. Listen to or sing along with the hymn.
9. *Opening acclamation.* Remain standing. The priest will say a greeting prayer and a collect prayer. Sing or say a reply.
10. *Sit.* Once the opening prayers are done, sit down to get ready for the readings.

Liturgy of the Word
1. *Old Testament reading.* Someone from the congregation will read a story from the Old Testament from the Bible. It is printed in the bulletin. Listen or read along silently.
2. *Psalm.* The psalm will be printed in the bulletin. Say or sing along with the rest of the congregation.
3. *New Testament reading.* Someone from the congregation will read a story from the New Testament from the Bible. It is printed in the bulletin. Listen or read along silently.
4. *Sequence hymn.* Stand and listen to or sing along with the hymn.
5. *Gospel reading.* The priest will read a story from the Gospels. Stand and listen quietly.
6. *Sermon.* Sit and listen quietly while the priest speaks.
7. *Nicene Creed.* Stand and say the Nicene Creed. It is printed in the bulletin.
8. *Prayers of the People.* Listen to the Prayers of the People and respond if asked to. They are printed in the bulletin.
9. *Peace.* The priest will say, "Peace be with you." Answer, "And also with you." Greet people nearby by saying "Peace." Some people will shake hands. Shake hands if you are comfortable.
10. *Sit.* Once the Peace is done, sit down to get ready for the Eucharist.

Liturgy of the Table
1. *Offertory.* Sit quietly and listen to the music being played or sung while the ushers collect money. You may put money in the plate as it is passed to you.
2. *Sursum Corda.* Stand and listen while the priest says a prayer.
3. *Sanctus.* Stand and say or sing the Sanctus (Holy, holy, holy).
4. *Eucharistic prayer.* Stand while the priest prays and blesses the bread and wine.
5. *Lord's Prayer.* Say the Lord's Prayer along with the rest of the congregation. Sit until it's time to go to communion.
6. *Go to communion.* When the usher gestures to you, stand up, go into the aisle, bow, and walk up to the communion rail. Stand or kneel at the rail.
7. *Bread.* When the priest comes to you, hold out your hands and the priest will put the host in your hands. Eat host.
8. *Wine.* When the Eucharistic minister comes to you, sip from the cup.
9. *Return to pew.* After the person next to you receives communion, go back to your pew, bow, and sit down.
10. *Post-communion prayer.* The priest will say a prayer after communion. Stand and listen quietly.

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Table 5.
Task analyses for Roman Catholic server (Marie).

Opening Procession
1.   *Get out Alb.* Open closet and remove alb.
2.   *Put on Alb.* Pull alb over head, put arms through sleeves, and snap.
3.   *Choose belt.* Take correct color belt from hanger on closet door.
4.   *Put on belt.* Put belt around waist and tie in bow.
5.   *Get cross.* Remove cross from bracket in back of church. Go to the back of the aisle.
6.   *Opening procession.* Lift the cross and walk down the aisle to the altar.
7.   *Go around altar.* Circle around left side of altar.
8.   *Go to cross stand.* Turn right and walk to the bracket at side altar.
9.   *Put cross in stand.* Slide cross into stand.
10. *Get book.* Walk to altar, pick up altar book, and carry to chairs.
11. *Put book between chairs.* Lay book on table between chairs.
12. *Stand.* Stand beside priest.
13. *Get book and hold.* Pick up book, move in front of priest, facing priest, and hold book while priest reads.
14. *Sit down.* Put book on table, return to chair, and sit down.

Communion
1.   *Hold text.* Stand up, move in front of priest, and hold text while he reads prayer.
2.   *Go to credence table.* Walk to credence table behind altar.
3.   *Bring tray to altar.* Pick up tray, bring to altar, and set on right side of altar.
4.   *Put cloth on altar.* Unfold corporal cloth and place on center of altar.
5.   *Put cross on cloth.* Place cross at top center of corporal cloth.
6.   *Put chalice on altar.* Put chalice on upper right corner of corporal cloth.
7.   *Put purificator cloth on altar.* Put purificator cloth on right below chalice.
8.   *Put communion cup on altar.* Put communion cup to right of the corporal cloth.
9.   *Put purificator cloth on altar.* Put second purificator on right of communion cup.
10. *Return tray.* Take tray to the credence table.
11. *Bring water to altar.* Bring cruet of water to altar and hand to priest.
12. *Return cruets to credence table.* Bring empty cruets to credence table.
13. *Bring bowl to priest.* Bring bowl of water to priest to ash hands.
14. *Return bowl to credence table.* Take bowl back to credence table.
15. *Return to chair.* Walk back to chair and stand.

Closing Procession
1.   *Hold book for prayer.* Pick up book, move in front of priest, and hold book while priest reads.
2.   *Put book down.* Return book to table between chairs.
3.   *Stand for announcements.* Return to chair and stand while priest makes announcements.
4.   *Get cross.* Go to the bracket and get the cross.
5.   *Bring cross to altar.* Take the cross from bracket and carry to the altar.
6.   *Go around altar.* Carry cross to the front of the altar and face altar.
7.   *Wait.* Stand and wait for the priest to bow.
8.   *Turn and walk.* Turn around and begin walking down the aisle to the back of the church.
9.   *Closing procession.* Walk around back of church and out the door to the cross stand.
10. *Return cross to stand.* Put cross into stand.
11. *Remove belt.* Untie belt and remove.
12. *Hang up belt.* Put belt on the hanger on closet door.
13. *Take off alb.* Unsnap alb and pull over head to remove.
14. *Hang up alb.* Place alb on hanger, return to closet, and close closet door.

Table 6.
Task analysis for Jewish service (Reuben).

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Talis
1. *Pick up talis.* Pick up talis and hold with both hands in front.
2. *Say blessing.* Recite "Barukh atah Adonai..."
3. *Put on head.* Bring talis around behind and over head.
4. *Cover face.* Briefly cover face with talis.
5. *Uncover face.* Open hands to uncover face.
6. *Put on shoulders.* Bring talis down to cover shoulders like a cape.
7. *Finish.* Stand quietly.

Blessing
1. *Walk to table.* When the Rabi says name, get up from pew and walk to table.
2. *Touch Torah.* When reader points with yad and says "Kiss here", touch that place with tzitzit.
3. *Kiss.* Kiss the edge of the talis.
4. *Read.* Read first half of blessing, "Baruch et Adonai…notain ha-torah."
5. *Listen.* Listen quietly to the Torah reading.
6. *Touch.* When reader points with yad, touch that place with tzitzit.
7. *Kiss.* Kiss the edge of the talis.
8. *Read.* Read the blessing after the reading, "Baruch ata Adonai...."

Shema
1. *Gather talis.* Gather corners of talis into right hand.
2. *Cover eyes.* Cover eyes and recite, "Shema Yisraeil…"
3. *Quietly.* Recite next line softly, in a whisper, "Baruch sheim kevod…"
4. *3rd sentence.* Read the third sentence, "Veahavta eit adonai elohecha…"
5. *4th sentence.* Read the fourth sentence, "Vehayu hadevarim haeile…"
6. *5th sentence.* Read the 5th sentence, Veshinantam levanecha…"
7. *6th sentence.* Read the sixth sentence, Ukeshartam leot al yadecha…"
8. *7th sentence.* Read the seventh sentence, "Uchetavtam al mezuzot…"

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Chapter Four

Results

The research questions were as follows: (1) Is a VM plus a SLP effective in teaching people with ID tasks within a faith community setting outside of regular faith community services or activities; and (2) will particular tasks taught in a faith community setting outside of regular faith community services or activities, generalize to regular faith community services or activities?

The data points were weighted to indicate which, if any, prompt in the SLP was used to correct incorrect responses. The weighted scores were (a) the number of steps completed independently multiplied by four, (b) the number of steps completed with a gestural prompt multiplied by three, (c) the number of steps completed with a verbal prompt multiplied by two, and (d) the number of steps completed with a physical prompt.

I transferred the data to a three-tier graph and used visual analysis of graphic data (Gast & Spriggs, 2014) to analyzed the graphs within conditions to determine (a) the length of each condition; (b) the mean, median, range, and stability envelope of the level within each condition; (c) the relative and absolute change within each condition; (d) the direction and stability of the trend within each condition; and (e) whether there were multiple paths within the trend of each condition. I also analyzed the graphs between adjacent conditions to determine (a) variables changed; (b) the change in trend, including direction change, effect, and stability change; (c) the change in level, including relative change, absolute change, median change, and mean change; and (d) data overlap, including the percentage of non-overlapping (PND) and overlapping data (POD). Additionally, I transferred data on the number and levels of prompts used in the SLP to graphs and a table for analysis of the effectiveness of the prompt sequence (Ault & Griffen, 2013).

The data indicate that all three participants were able to reach criterion in all three task analyses. Visual analysis of the data showed a functional relation between the introduction of the intervention and acquisition of behaviors needed for participation in a faith community. All three participants exhibited a low, stable trend during baseline. When the independent variable (i.e., VM and SLP) was introduced, each participant had an immediate, positive, stable change in level. This was replicated two times for each participant. Finally, all three participants were able to generalize the behaviors learned in a novel service or setting.

Data Analysis of Dependent Variables

Jack. Figure 1 displays the weighted data points for Jack. Jack's goal was to learn the routine of a typical Episcopal service in order for him to learn to attend a service without incident. Jack was able to learn all three behaviors to criterion and generalized the behaviors to a full Sunday worship service, which included all elements of a typical faith community worship service, such as other worshipers, faith community leaders, and music. The effectiveness of the VM and SLP intervention for Jack was evaluated within conditions (Table 7) and between adjacent conditions (Table 8) using visual analysis of graphic data.

Gathering. In the gathering behavior, Jack demonstrated a zero-celerating stable baseline (M=0; range=0). The variables changed between baseline and intervention for the gathering were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level and trend. The weighted number of steps completed upon introducing the intervention demonstrated an accelerating, stable trend (M=39; range=26-40). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as one generalization probe during a Sunday service. Maintenance and generalization remained at a positive, zero-celerating, stable trend (M=39; range=39). There were no multiple paths within trends. The PND was 100%.

Liturgy of the Word. In the Liturgy of the Word behavior, Jack demonstrated a zero-celerating stable baseline (*M*=12; range=12). The variables changed between baseline and intervention for the Liturgy of the Word were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level. The weighted number of steps completed during intervention demonstrated a positive, zero-celerating, stable trend (*M*=37; range=36-39). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as one generalization probe during a Sunday service. Maintenance and generalization demonstrated a zero-celerating, stable trend (*M*=38.2; range=37-40). There were no multiple paths within trends. The PND was 100%.

Liturgy of the table. In the Liturgy of the Table behavior, Jack demonstrated a zero-celerating stable baseline (*M*=4; range=4). The variables changed between baseline and intervention for the Liturgy of the Table were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level and trend. The weighted number of steps completed upon introducing the intervention demonstrated a positive, accelerating, stable trend (*M*=39.5; range=36-40). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as one generalization probe during a Sunday service. Maintenance and generalization demonstrated a zero-celerating, stable trend (*M*=40; range=40). There were no multiple paths within trends. The PND was 100%.

Effectiveness of SLP. Jack was one of two participants who needed the prompt hierarchy of the SLP to reach criterion-level responding. Figures 2, 3, and 4 show, respectively, the number and type of prompted responses by Jack across behaviors during the gathering, Liturgy of the Word, and Liturgy of the Table interventions.

Gathering. During the gathering intervention, the data showed an increase in verbal prompts as physical prompts decreased. Similarly, as verbal prompts decreased, gestural prompts

increased. Jack continued to need gestural prompts for step 8 (i.e., stand for procession) even after reaching criterion for the task analysis.

Liturgy of the Word. During the Liturgy of the Word intervention, Jack did not require physical prompts. The data show that verbal prompts decreased as gestural prompts increased for step 4 (i.e., stand for sequence hymn) and step 6 (i.e., stand for Nicene Creed). He continued to require intermittent gestural prompts for these two steps as he reached criterion, as well as for step 10 (i.e., sitting after passing the peace).

Liturgy of the Table. During the Liturgy of the Table intervention, Jack needed occasional verbal and gestural prompts during step 2 (i.e., stand for the Sursum Corda prayer) and step 10 (i.e., stand for the post-communion prayer). The prompts for these two steps did not follow the hierarchy of the SLP.

Marie. Figure 5 displays the weighted data points for Marie. Marie's goal was to learn to be a server in a Roman Catholic Mass. Marie was able to learn all three behaviors to criterion and generalized the behaviors to a full Wednesday noon worship service, which included all elements of a typical faith community worship service, such as other worshipers, faith community leaders, and music. The effectiveness of the VM and SLP intervention for Marie was evaluated within conditions (Table 9) and between adjacent conditions (Table 10) using visual analysis of graphic data.

Opening procession. In the opening procession behavior, Marie demonstrated a zero-celerating stable baseline (*M*=16; range=0-16). The variables changed between baseline and intervention for the opening procession were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level. The weighted number of steps completed upon introducing the intervention demonstrated a positive, zero-celerating, stable trend (*M*=56; range=36-56). The variables changed between intervention and

maintenance and generalization were he removal of the VM, as well as generalization probes conducted during a Wednesday noon service. Maintenance and generalization demonstrated a zero-celerating, stable trend (*M*=56; range=56). There were no multiple paths within trends. The PND was 100%.

Communion. In the communion behavior, Marie demonstrated a zero-celerating stable baseline (*M*=0; range=0). The variables changed between baseline and intervention for communion were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level and trend. The weighted number of steps completed upon introducing the intervention demonstrated a positive, accelerating, stable trend (*M*=56; range=38-60). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as one generalization probe during a Wednesday noon service. Maintenance and generalization remained at a zero-celerating, stable trend (*M*=60; range=60). There were no multiple paths within trends. The PND was 100%.

Closing procession. In the closing procession behavior, Marie demonstrated a zero-celerating stable baseline (*M*=12; range=0-12). The variables changed between baseline and intervention for the opening procession were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level. The weighted number of steps completed upon introducing the intervention demonstrated a positive, zero-celerating, stable trend (*M*=56; range=52-56). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as one generalization probe during a Wednesday noon service. Maintenance and generalization remained at a zero-celerating, stable trend (*M*=56; range=56). There were no multiple paths within trends. The PND was 100%.

Effectiveness of SLP. Marie required a minimal number of prompts in the hierarchy of the SLP during the opening procession and for one step in the communion task analysis (i.e.,

bring water cruet to altar) in order to reach criterion-level responding. She did not require the prompt hierarchy of the SLP to reach criterion-level responding for the other two task analyses. Figures 6, 7, and 8 show, respectively, the number and type of prompted responses by Marie across behaviors during the opening procession, communion, and closing procession interventions.

Opening procession. During the opening procession intervention, Marie required verbal prompts during the first trial for five of the 14 steps in the task analysis. She did not require any prompts for the remaining trials.

Communion. During the communion intervention, Marie's verbal prompts decreased and were replaced by gestural prompts, which were in turn replaced by independent responses for step 11 (i.e., bring water cruet to altar). She required verbal prompts during the first trial for six of the 14 remaining steps in the task analysis. She also required a gestural prompt during the first trial for step 1 (i.e., hold text while priest reads) and an additional verbal prompt during the second trial for step 2 (i.e., go to the credence table). She did not require any prompts for the remaining trials.

Closing procession. During the closing procession, Marie required verbal prompts during the first trial of for step 4 (i.e., get cross) and step 8 (i.e., turn and walk) of the 14 steps in the task analysis. She did not require any prompts for the remaining trials.

Reuben. Figure 9 displays the weighted data points for Reuben. Reuben's goal was to learn Jewish blessings and prayers that would be used in services as well as in preparation for his own Bar Mitzvah. Reuben was able to learn all three behaviors to criterion and generalized the behaviors to the synagogue. The effectiveness of the VM and SLP intervention for Reuben was evaluated within conditions (Table 11) and between adjacent conditions (Table 12) using visual analysis of graphic data.

Talis. In the talis behavior, Reuben demonstrated a zero-celerating stable baseline (*M*=4; range=4). The variables changed between baseline and intervention for the opening procession were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level. The weighted number of steps completed upon introducing the intervention demonstrated a positive, zero-celerating, stable trend (*M*=28; range=26-28). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as a generalization probe conducted in the synagogue. Maintenance and generalization demonstrated a zero-celerating, stable trend (*M*=26; range=26-28). There were no multiple paths within trends. The PND was 100%.

Blessing. In the blessing behavior, Reuben demonstrated a decelerating stable baseline (*M*=4; range=4-12). The variables changed between baseline and intervention for the opening procession were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level and trend. The weighted number of steps completed upon introducing the intervention demonstrated a positive, zero-celerating, stable trend (*M*=30; range=25-32). The variables changed between intervention and maintenance and generalization were he removal of the VM, as well as a generalization probe conducted in the synagogue. Maintenance and generalization demonstrated a zero-celerating, stable trend (*M*=32; range=32). There were no multiple paths within trends. The PND was 100%.

Shema. In the Shema behavior, Reuben demonstrated a zero-celerating stable baseline (*M*=0; range=0). The variables changed between baseline and intervention for the opening procession were the implementation of VM and SLP. When the intervention was introduced, there was a dramatic and immediate increase in level. The weighted number of steps completed upon introducing the intervention demonstrated a positive, zero-celerating, stable trend (*M*=31; range=27-32). The variables changed between intervention and maintenance and generalization

were he removal of the VM, as well as a generalization probe conducted in the synagogue. Maintenance and generalization demonstrated a zero-celerating, stable trend (*M*=30; range=30). There were no multiple paths within trends. The PND was 100%.

   Effectiveness of SLP. Although Reuben required prompts to reach criterion-level responding for his task analyses, the prompts did not follow the hierarchy of the SLP. Figures 10, 11, and 12, show, respectively, the number and type of prompted responses by Reuben across behaviors during the talis, blessing, and Shema interventions.

   Talis. During the talis intervention, Reuben needed one verbal prompt during trial 4 for step 3 (i.e., put talis on head). He needed one gestural prompt during trial 1 of step 1 (i.e., pick up talis). He did not require any prompts for the remaining trials.

   Blessing. During the blessing intervention, Reuben required verbal and gestural prompts for four of the eight steps of the task analysis. He continued to need verbal and gestural prompts for step 4 (i.e., read first half of blessing) and step 7 (i.e., kiss edge of talis). He did not require any prompts for the remaining trials.

   Shema. During the Shema intervention, Reuben required physical and gestural prompts for step 1 (i.e., gather talis). He also needed one verbal and one gestural prompt for step 2 (i.e., cover eyes). He did not require any prompts for the remaining trials.

Interobserver Agreement

   A doctoral candidate, trained in observation criteria and certified by the CITI Program in human subjects research, independently collected independently collected data on the number of correctly performed steps for at least 20% of baseline, intervention, generalization, and maintenance trials (Ayres & Ledford, 2014).

   Jack. The observer collected IOA data on the dependent variable for 45% of Jack's baseline trials and 20% of his intervention trials. Interobserver agreement across all baseline

trials for the number of steps completed independently and the number of steps completed with prompts was 100%. Interobserver agreement for intervention was 85% (range = 70% - 100%). During one trial the IOA dropped below 80%. Upon review, it was determined that this was due to difficulty on the part of the second observer regarding whether the trainer was using gestural prompts or allowing for natural cues (e.g., Jack responding to the trainer standing at the appropriate point in the service). Once the natural cues were clarified, the IOA rose to acceptable levels.

Marie. The observer collected IOA data on the dependent variable for 37% of Marie's baseline trials and 35% of intervention trials. Interobserver agreement for baseline trials for the number of steps completed independently and the number of steps completed with prompts was 100%. Interobserver agreement for intervention was 90% (range = 67% - 100%). The IOA dropped below 80% for one trial. When reviewed, it was determined that the secondary observer had difficulty seeing the actions taking place at the altar during the communion behavior. We reviewed the steps that occurred at the altar and changed the secondary observer's position to alleviate any ambiguity in seeing what was happening at the altar. When the changes were made, the IOA rose to acceptable levels.

Reuben. The second observer collected IOA data on the dependent variable for 47% of Reuben's baseline trials and 36% of intervention trials. Interobserver agreement across baseline trials for the number of steps completed independently and the number of steps completed with prompts was 100%. Interobserver agreement for intervention was 90% (range = 75% - 100%). The IOA dropped below 80% for two trials. Upon review, there were several natural cues that had to be clarified (e.g., the reader in the blessing behavior pointing to the Torah passage and stating, "Please kiss here."). Once the natural cues were explained more thoroughly and altered on the task analysis, the IOA rose to acceptable levels.

Procedural Reliability

  Jack. The second observer collected procedural reliability data for 45% of Jack's

baseline trials and 20% of his intervention trials. Procedural reliability across baseline trials for

the number of steps completed correctly was 97% (range = 80%-100%). Procedural reliability

across intervention trials for the number of steps completed correctly was 98% (range = 87.5%-

100%).

  Marie. The second observer collected procedural reliability data for 37% of Marie's

baseline trials and 35% of intervention trials. Procedural reliability across baseline trials for the

number of steps completed correctly was 83% (range = 80%-100%). Procedural reliability across

intervention trials for the number of steps completed correctly was 98% (range = 87.5%-100%).

  Reuben. The second observer collected procedural reliability data for 47% of Reuben's

baseline trials and 36% of intervention trials. Procedural reliability across baseline trials for the

number of steps completed correctly was 100%. Procedural reliability across intervention trials

for the number of steps completed correctly was 100%.

Table 7

Within Condition Analysis for Jack

E1 Gathering

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	14	3
Level			
Median	0	39	39
Mean	0	38.5	38.5
Range	0	26-40	37-40
Stability Envelope	0	7.8	7.8
Level Change			
Relative Change	0	1	0
Absolute Change	0	6.5	1
Trend			
Direction	zero-celerating	accelerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

E2 Liturgy of the Word

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	7	2
Level			
Median	12	37	38.5
Mean	12	37.4	38.5
Range	12	36-39	37-40
Stability Envelope	2.4	7.4	7.7
Level Change			
Relative Change	0	2	3
Absolute Change	0	0.5	3
Trend			
Direction	zero-celerating	zero-celerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

E3 Liturgy of the Table

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	8	1
Level			
Median	4	39.5	40
Mean	4	39	40
Range	4	36-40	40
Stability Envelope	0.8	7.9	8
Level Change			
Relative Change	0	0	0
Absolute Change	0	0.5	0
Trend			
Direction	zero-celerating	zero-celerating	zero-celeratig
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

Table 8

Between Adjacent Condition Comparison for Jack

E1 Gathering

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to accelerating	accelerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	37	1
Absolute Change	26	0
Median Change	39	0
Mean Change	38.5	0
Data Overlap		
PND	100%	0%
POD	0%	100%

E2 Liturgy of the Word

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to zero-celerating	zero-celerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	25	0.5
Absolute Change	24	0
Median Change	25	1.5
Mean Change	25.4	1.1
Data Overlap		
PND	100%	0%
POD	0%	100%

E3 Liturgy of the Table

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to zero-celerating	zero-celerating to zero-celerating
Effect	positive	positive
Stability Change	stable	stable
Change in Level		
Relative Change	35	1
Absolute Change	33.5	0
Median Change	35.5	0.5
Mean Change	35	1
Data Overlap		
PND	100%	0%
POD	0%	100%

Table 9

Within Condition Analysis for Marie

RC1 Opening Procession

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	6	4
Level			
Median	16	56	56
Mean	12.8	53	56
Range	0-16	36-56	56
Stability Envelope	3.2	11.2	11.2
Level Change			
Relative Change	0	0	0
Absolute Change	0	0	0
Trend			
Direction	zero-celerating	zero-celerating	Zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

RC2 Eucharist

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	7	2
Level			
Median	0	56	60
Mean	0	55.5	60
Range	0	38-60	60
Stability Envelope	0	12	12
Level Change			
Relative Change	0	1	0
Absolute Change	0	8	0
Trend			
Direction	zero-celerating	accelerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

RC3 Closing Procession

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	6	2
Level			
Median	12	56	56
Mean	12	55	56
Range	0-12	52-56	56
Stability Envelope	2.4	11.2	11.2
Level Change			
Relative Change	0	0	0
Absolute Change	0	0	0
Trend			
Direction	zero-celerating	zero-celerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

Table 10

Between Adjacent Condition Comparison for Marie

RC1 Opening Procession

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to zero-celerating	zero-celerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	40	0
Absolute Change	20	0
Median Change	40	0
Mean Change	40.2	3
Data Overlap		
PND	100%	0%
POD	0%	100%

RC2 Eucharist

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to accelerating	accelerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	52	0
Absolute Change	38	0
Median Change	56	4
Mean Change	55.5	4.5
Data Overlap		
PND	100%	0%
POD	0%	100%

RC3 Closing Procession

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to zero-celerating	zero-celerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	44	0
Absolute Change	40	0
Median Change	44	0
Mean Change	43	1
Data Overlap		
PND	100%	0%
POD	0%	100%

Table 11

Within Condition Analysis for Reuben

J1 Talis

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	7	3
Level			
Median	4	28	26
Mean	4	27.5	26.6
Range	4	26-28	26-28
Stability Envelope	0.8	5.6	5.2
Level Change			
Relative Change	0	0	1
Absolute Change	0	1	1
Trend			
Direction	zero-celerating	zero-celerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

J2 Blessing

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	7	2
Level			
Median	4	30	32
Mean	5.6	29.7	32
Range	4-12	25-32	32
Stability Envelope	0.8	6	6.4
Level Change			
Relative Change	0	0	0
Absolute Change	4	4	0
Trend			
Direction	decelerating	accelerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

J3 Shema

Condition	Baseline (A)	Intervention (B)	Maintenance
Condition Length	5	8	1
Level			
Median	0	31	30
Mean	0	30.6	30
Range	0	27-32	30
Stability Envelope	0	6.2	6
Level Change			
Relative Change	0	1	0
Absolute Change	0	2	0
Trend			
Direction	zero-celerating	zero-celerating	zero-celerating
Stability	stable	stable	stable
Multiple Paths within Trend	no	no	no

Table 12

Between Adjacent Condition Comparison for Reuben

J1 Talis

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to zero-celerating	zero-celerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	23	0
Absolute Change	24	0
Median Change	24	2
Mean Change	23.5	1
Data Overlap		
PND	100%	0%
POD	0%	100%

J2 Blessing

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	decelerating to accelerating	accelerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	21	0
Absolute Change	24	2
Median Change	26	2
Mean Change	24	2.3
Data Overlap		
PND	100%	0%
POD	0%	100%

J3 Shema

Condition Comparison	Intervention (B) Baseline (A)	Maintenance Intervention (B)
Variables Changed	Implemented video modeling/SLP	Removed video modeling/SLP
Change in Trend		
Direction Change	zero-celerating to zero-celerating	zero-celerating to zero-celerating
Effect	positive	positive
Stability Change	stable to stable	stable to stable
Change in Level		
Relative Change	28	2
Absolute Change	30	2
Median Change	31	1
Mean Change	30.6	0.6
Data Overlap		
PND	100%	0%
POD	0%	100%

Figure 1. Number of weighted responses by Jack across behaviors. Closed squares represent generalized performance. Weighted responses: independent responses X 4; gestural prompt X 3; verbal prompt X 2, physical prompt X 1.
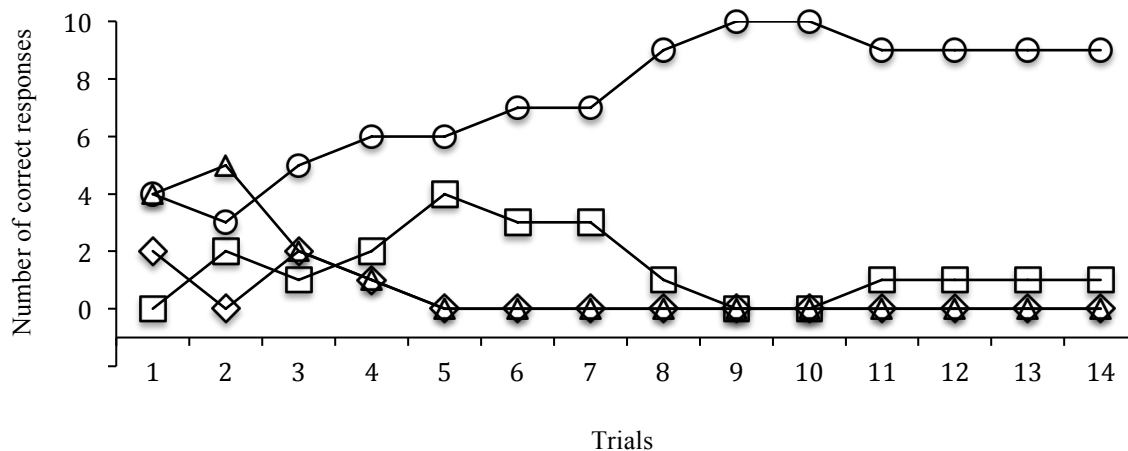
Step	Task Analysis	Participant Response Trials													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Enter church	V	V	G	I	I	I	I	I	I	I	I	I	I	I
2	Get bulletin	I	G	V	I	G	I	I	I	I	I	I	I	I	I
3	Sign of the cross	P	G	P	P	G	I	I	I	I	I	I	I	I	I
4	Go to pew	I	V	I	I	I	I	I	I	I	I	I	I	I	I
5	Bow	V	V	V	V	I	I	I	I	I	I	I	I	I	I
6	Sit	V	I	I	I	I	G	G	I	I	I	I	I	I	I
7	Sit quietly during prelude	I	I	I	I	I	I	I	I	I	I	I	I	I	I
8	Stand for procession	V	V	P	G	G	G	G	G	I	I	G	G	I	G
9	Stand for opening acclamation	I	I	I	I	I	I	I	I	I	I	I	I	I	I
10	Sit	P	V	I	G	G	G	G	I	I	I	I	I	G	I
	Number of I points	4	3	5	6	6	7	7	9	10	10	9	9	9	9
	Number of G points	0	2	2	2	4	3	3	1	0	0	1	1	1	1
	Number of V points	4	5	2	1	0	0	0	0	0	0	0	0	0	0
	Number of P points	2	0	0	1	0	0	0	0	0	0	0	0	0	0

Figure 2. Number and type of prompted responses by Jack across behaviors during gathering intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.
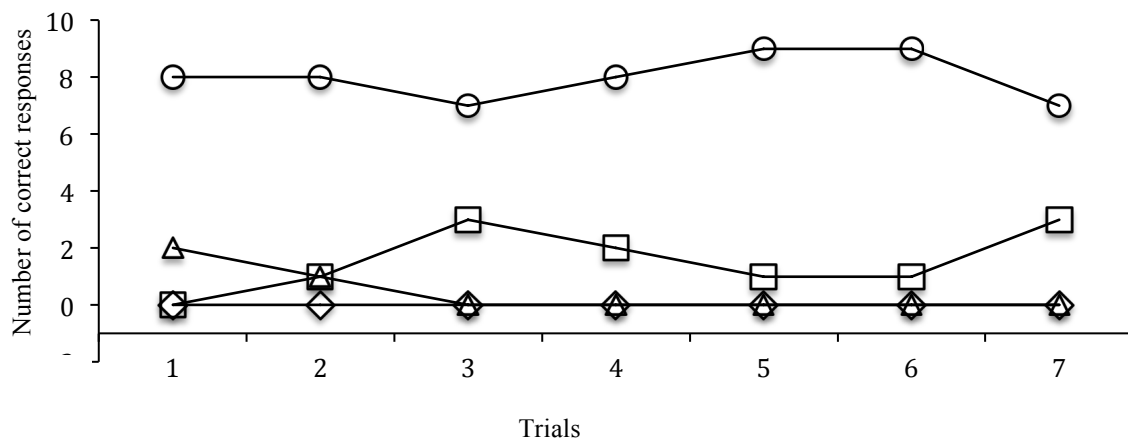
Step	Task Analysis	Participant Response Trials						
		1	2	3	4	5	6	7
1	Old Testament reading	I	I	I	I	I	I	I
2	Psalm	I	I	I	I	I	I	I
3	New Testament reading	I	I	I	I	I	I	I
4	Sequence hymn	V	G	I	G	I	I	G
5	Gospel reading	I	I	I	I	I	I	I
6	Sermon	I	I	G	I	I	I	I
7	Nicene Creed	V	V	G	I	I	G	G
8	Prayers of the People	I	I	I	I	I	I	I
9	Passing the peace	I	I	I	I	G	I	I
10	Sit	I	G	G	G	I	I	G
	Number of I points	8	7	7	8	9	9	7
	Number of G points	0	2	3	2	1	1	3
	Number of V points	2	1	0	0	0	0	0
	Number of P points	O	0	0	0	0	0	0

Figure 3. Number and type of prompted responses by Jack across behaviors during Liturgy of the Word intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.

Step	Task Analysis		Participant Response Trials							
			1	2	3	4	5	6	7	8
1	Offertory		I	I	I	I	I	I	I	I
2	Sursum Corda		G	I	V	I	I	I	I	G
3	Sanctus		I	I	I	I	I	I	I	I
4	Eucharistic prayer		I	I	I	I	I	I	I	I
5	Lord's Prayer		I	I	I	I	I	I	I	I
6	Go to communion		I	I	I	I	I	I	I	I
7	Receive bread		I	I	I	I	I	I	I	I
8	Receive wine		I	I	I	I	I	I	I	I
9	Return to pew		I	I	I	I	I	I	I	I
10	Post-communion prayer		I	G	V	I	I	I	I	I
	Number of I points		9	9	8	10	10	10	10	9
	Number of G points		1	1	2	0	0	0	0	1
	Number of V points		0	0	0	0	0	0	0	0
	Number of P points		0	0	0	0	0	0	0	0

Figure 4. Number and type of prompted responses by Jack across behaviors during Liturgy of the Table intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.
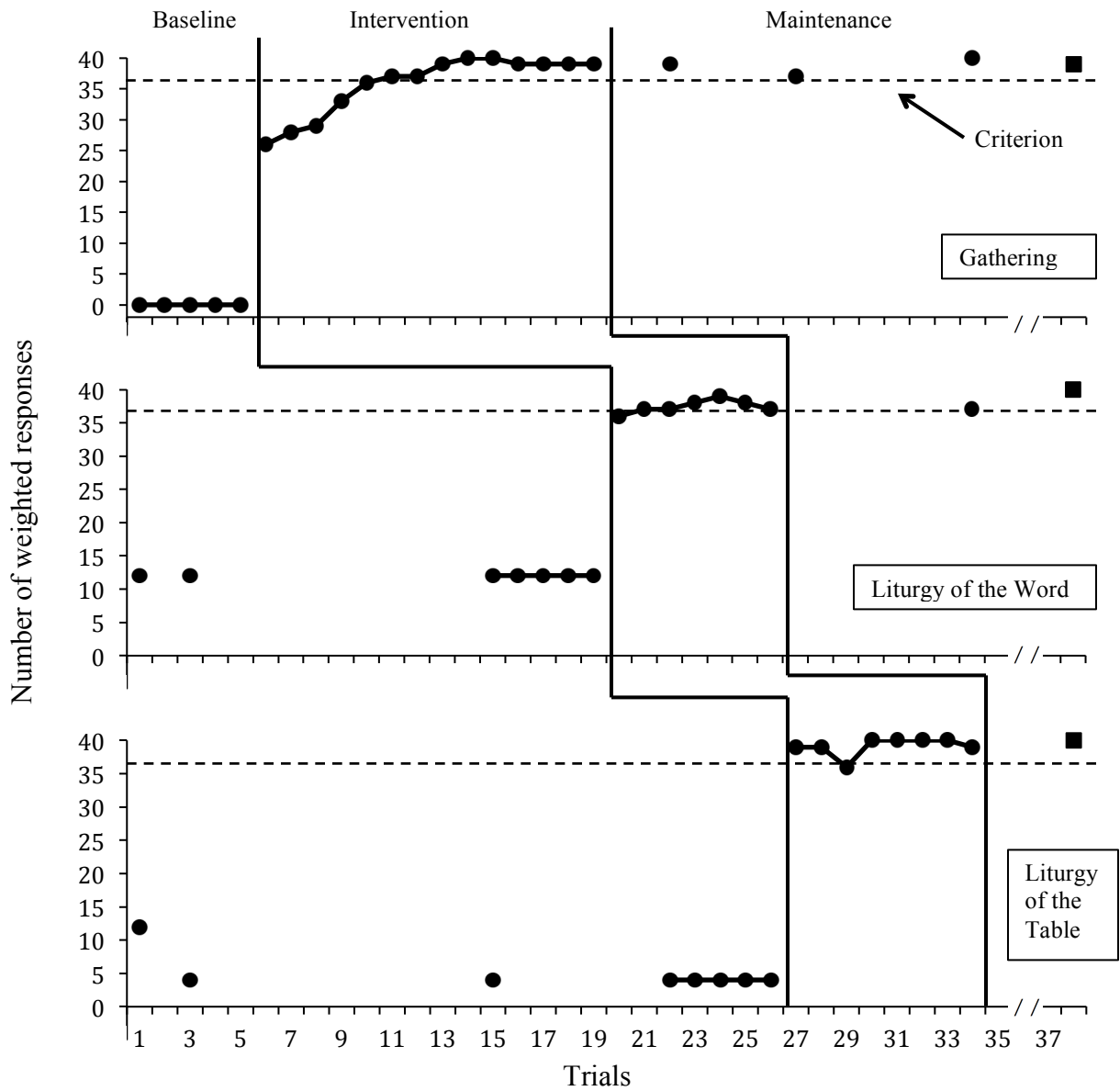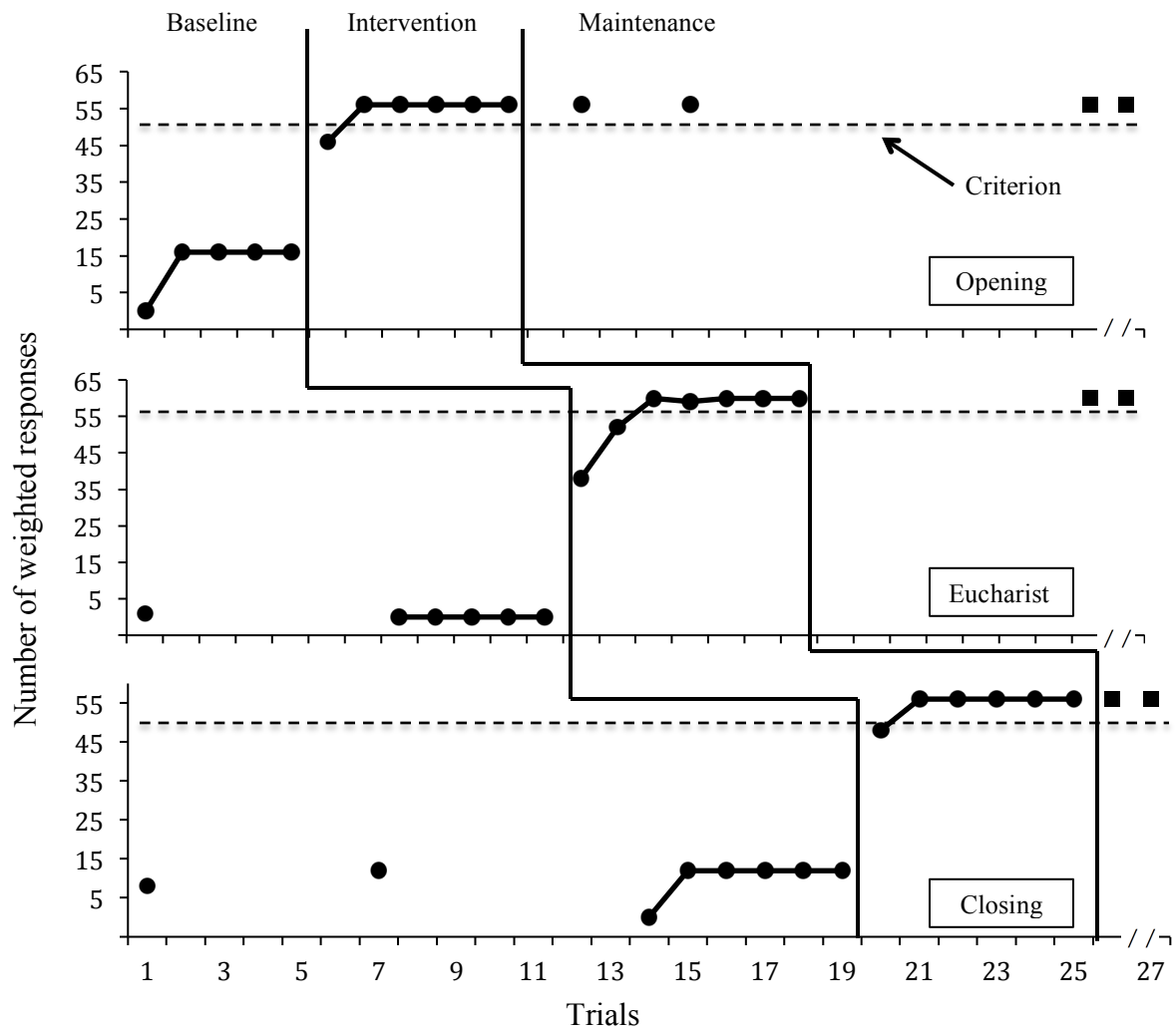
Figure 5. Number of weighted responses by Marie across behaviors. Closed squares represent generalized performance. Weighted responses: independent responses X 4; gestural prompt X 3; verbal prompt X 2, physical prompt X 1.
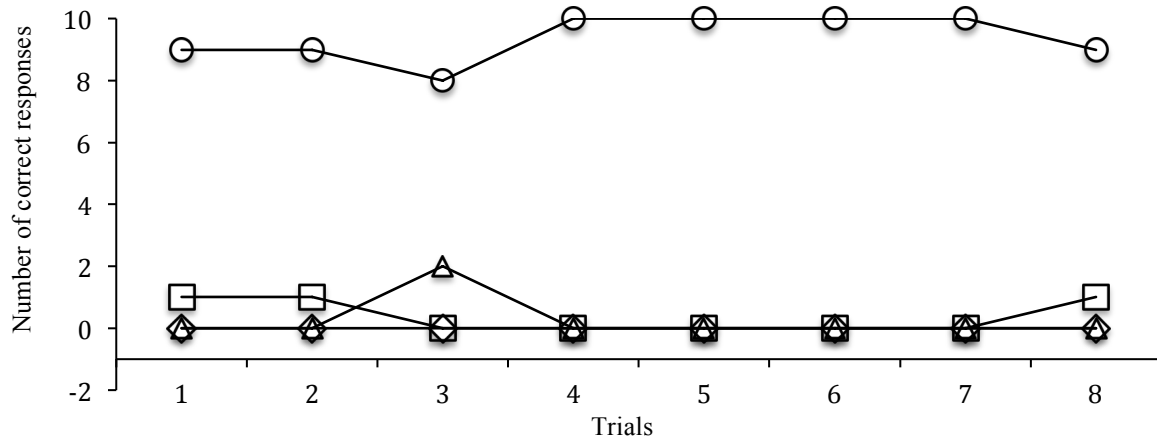
Step	Task Analysis	Participant Response Trials					
		1	2	3	4	5	6
1	Get out alb	I	I	I	I	I	I
2	Put on alb	I	I	I	I	I	I
3	Choose belt	I	I	I	I	I	I
4	Put on belt	I	I	I	I	I	I
5	Get cross	V	I	I	I	I	I
6	Opening procession	I	I	I	I	I	I
7	Go around altar	V	I	I	I	I	I
8	Go to cross stand	I	I	I	I	I	I
9	Put cross in stand	I	I	I	I	I	I
10	Get book	V	I	I	I	I	I
11	Put book between chairs	I	I	I	I	I	I
12	Stand	V	I	I	I	I	I
13	Get book and hold while priest reads	V	I	I	I	I	I
14	Sit down	I	I	I	I	I	I
	Number of I points	9	14	14	14	14	14
	Number of G points	0	0	0	0	0	0
	Number of V points	5	0	0	0	0	0
	Number of P points	0	0	0	0	0	0

Figure 6. Number and type of prompted responses by Marie across behaviors during opening procession intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.

Step	Task Analysis	Participant Response Trials						
		1	2	3	4	5	6	7
1	Hold text while priest reads	G	I	I	I	I	I	I
2	Go to credence table	V	V	I	I	I	I	I
3	Bring tray to altar	I	I	I	I	I	I	I
4	Put cloth on altar	V	I	I	I	I	I	I
5	Put cross on cloth	I	I	I	I	I	I	I
6	Put chalice on altar	V	I	I	I	I	I	I
7	Put purificator cloth on altar	V	I	I	I	I	I	I
8	Put communion cup on altar	V	I	I	I	I	I	I
9	Put purificator cloth on altar	V	I	I	I	I	I	I
10	Return tray to credence table	I	I	I	I	I	I	I
11	Bring water cruet to altar	V	G	I	G	I	I	I
12	Return cruets to credence table	I	I	I	I	I	I	I
13	Bring bowl to priest	I	I	I	I	I	I	I
14	Return bowl to credence table	I	I	I	I	I	I	I
15	Return to chair	I	I	I	I	I	I	I
	Number of I points	7	13	15	14	15	15	15
	Number of G points	1	1	0	1	0	0	0
	Number of V points	7	1	0	0	0	0	0
	Number of P points	0	0	0	0	0	0	0

Figure 7. Number and type of prompted responses by Marie across behaviors during communion intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.
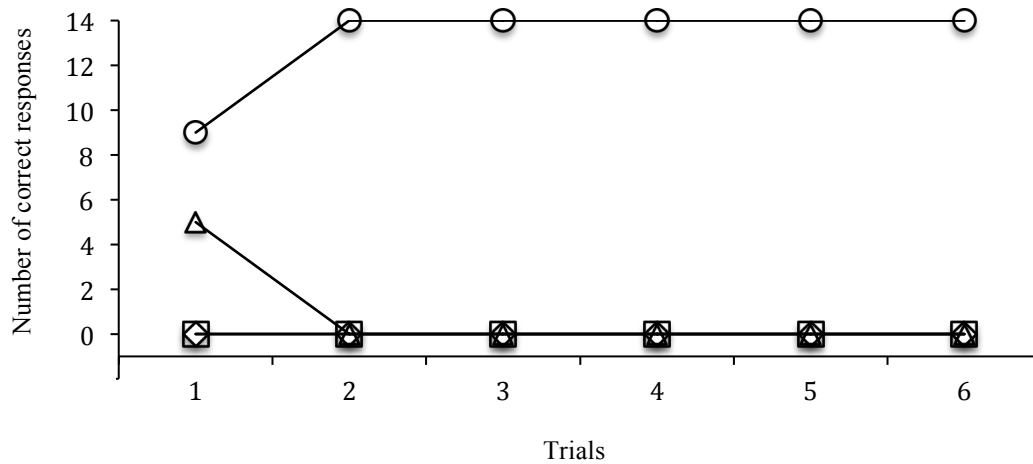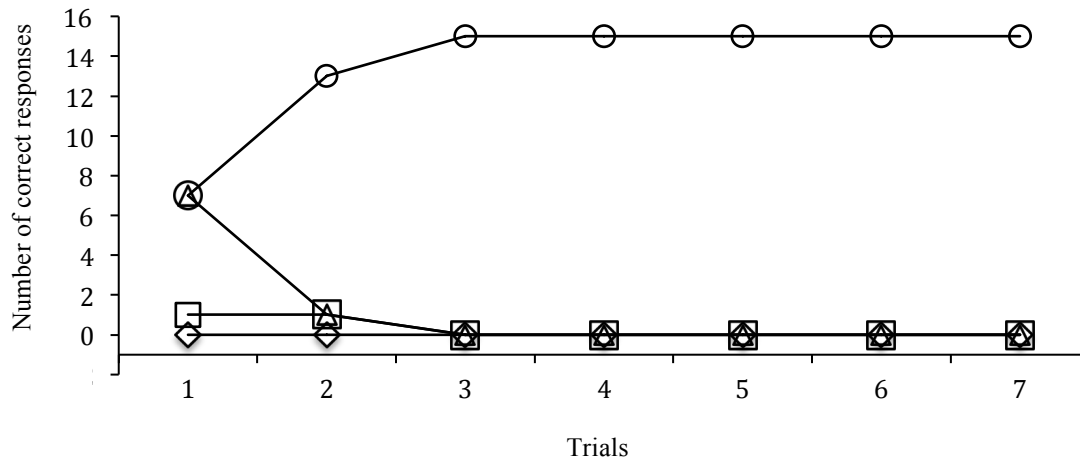
Step	Task Analysis	Participant Response Trials						
		1	2	3	4	5	6	7
1	Hold book for prayer	I	I	I	I	I	I	I
2	Put book down	I	I	I	I	I	I	I
3	Stand for announcements	I	I	I	I	I	I	I
4	Get cross	V	I	I	I	I	I	I
5	Bring cross to altar	I	I	I	I	I	I	I
6	Go around altar	I	I	I	I	I	I	I
7	Wait for priest to bow	I	I	I	I	I	I	I
8	Turn and walk	V	I	I	I	I	I	I
9	Walk around back of church and out	I	I	I	I	I	I	I
10	Return cross to stand	I	I	I	I	I	I	I
11	Remove belt	I	I	I	I	I	I	I
12	Hang up belt	I	I	I	I	I	I	I
13	Take off alb	I	I	I	I	I	I	I
14	Hang up alb	I	I	I	I	I	I	I
	Number of I points	12	14	14	14	14	14	14
	Number of G points	0	0	0	0	0	0	0
	Number of V points	2	0	0	0	0	0	0
	Number of P points	0	0	0	0	0	0	0

Figure 8. Number and type of prompted responses by Marie across behaviors during closing procession intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.
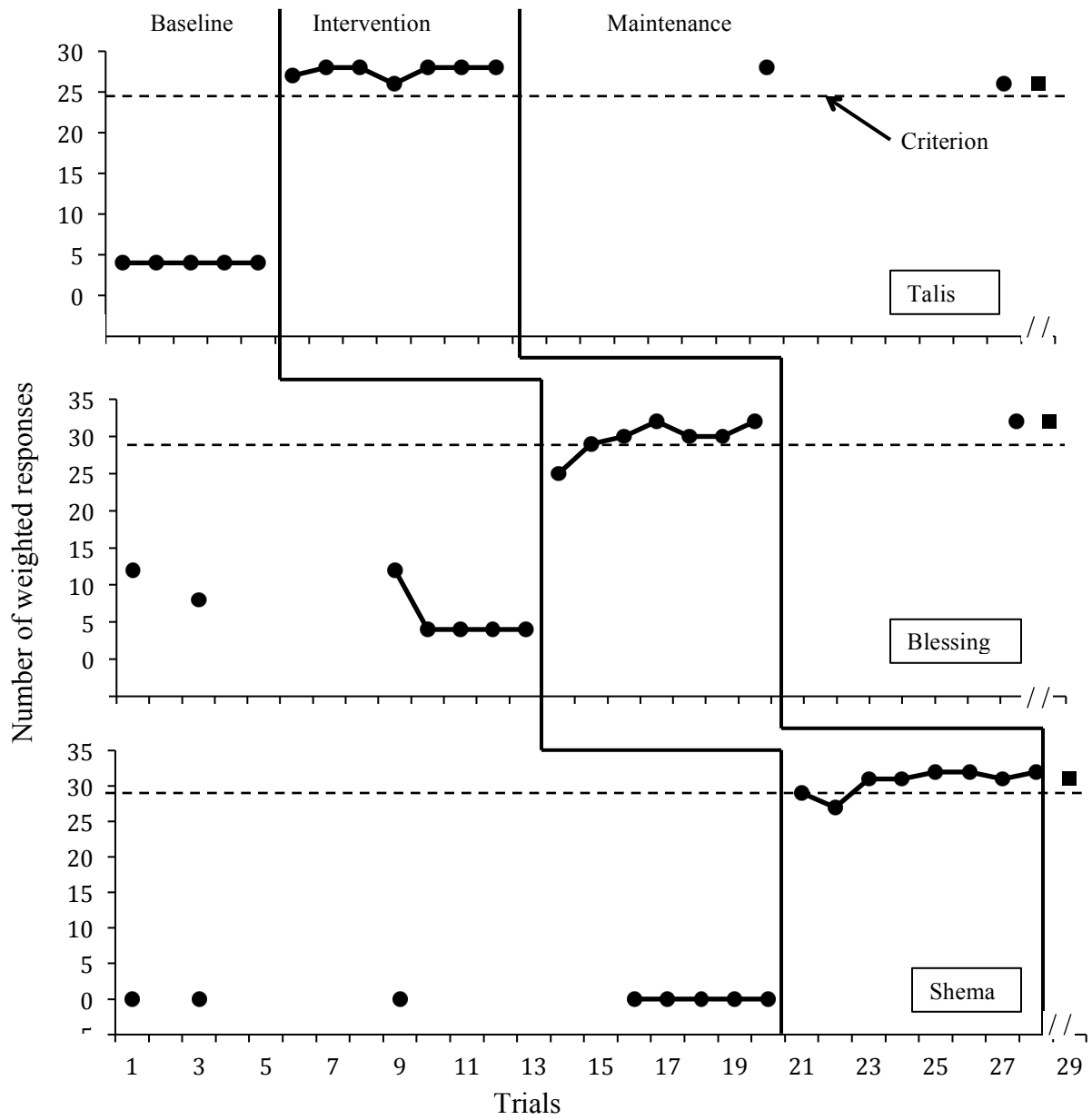
Figure 9. Number of weighted responses by Reuben across behaviors. Closed squares represent generalized performance. Weighted responses: independent responses X 4; gestural prompt X 3; verbal prompt X 2, physical prompt X 1.
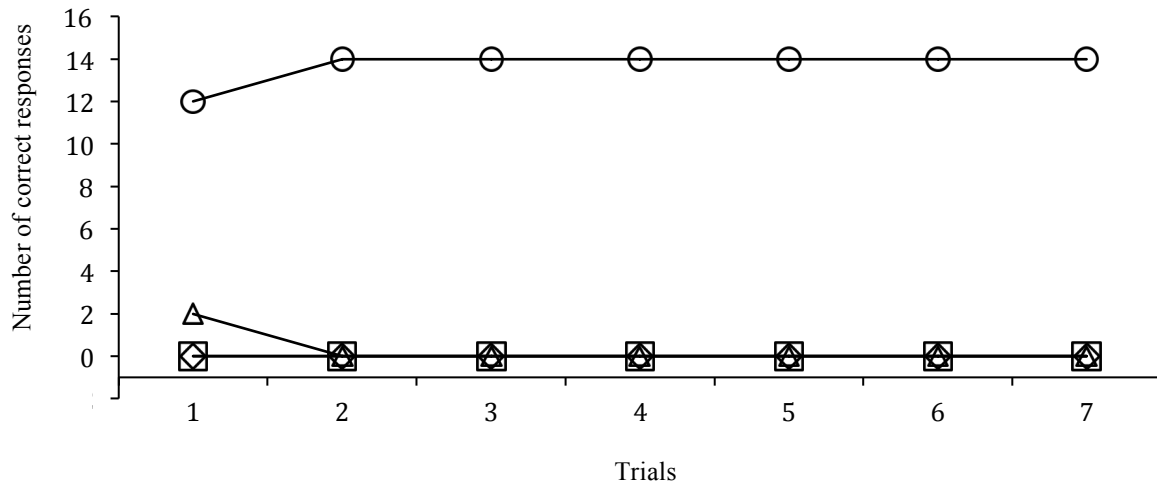
Step	Task Analysis	Participant Response Trials						
		1	2	3	4	5	6	7
1	Pick up talis	G	I	I	I	I	I	I
2	Say blessing	I	I	I	I	I	I	I
3	Put on head	I	I	I	V	I	I	I
4	Cover face	I	I	I	I	I	I	I
5	Uncover face	I	I	I	I	I	I	I
6	Put on shoulders	I	I	I	I	I	I	I
7	Finish	I	I	I	I	I	I	I
	Number of I points	6	7	7	6	7	7	7
	Number of G points	1	0	0	0	0	0	0
	Number of V points	0	0	0	1	0	0	0
	Number of P points	0	0	0	0	0	0	0

Figure 10. Number and type of prompted responses by Reuben across behaviors during talis intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.

Table 17

Step	Task Analysis	Participant Response Trials						
		1	2	3	4	5	6	7
1	Walk to table	I	I	I	I	I	I	I
2	Touch Torah	V	I	I	I	I	I	I
3	Kiss edge of talis	V	I	I	I	I	I	I
4	Read first half of blessing	G	G	V	I	V	I	I
5	Listen quietly to Torah reading	I	I	I	I	I	I	I
6	Touch Torah	V	I	I	I	I	I	I
7	Kiss edge of talis	I	V	I	I	I	G	I
8	Read second half of blessing	I	I	I	I	I	I	I
	Number of I points	4	6	7	8	7	7	8
	Number of G points	1	1	0	0	0	1	0
	Number of V points	3	1	1	0	1	0	0
	Number of P points	0	0	0	0	0	0	0

Figure 11. Number and type of prompted responses by Reuben across behaviors during blessing intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.
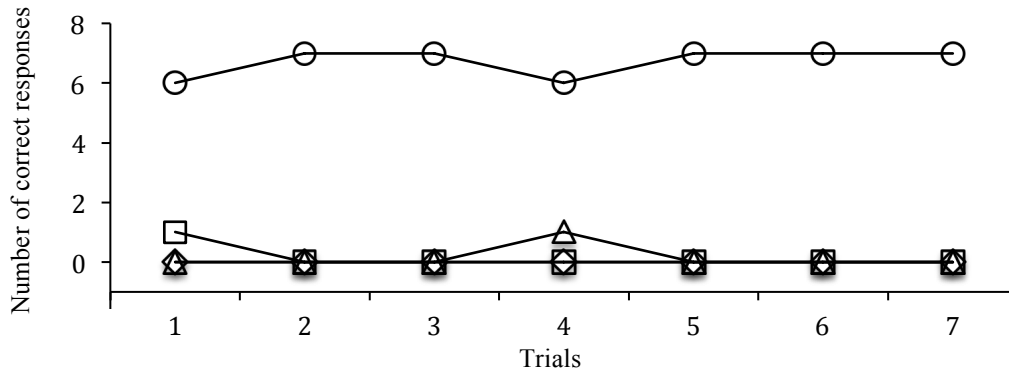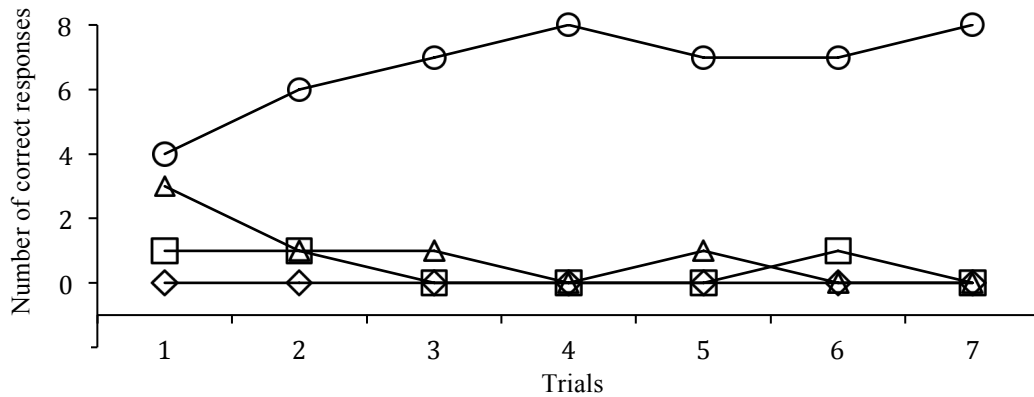
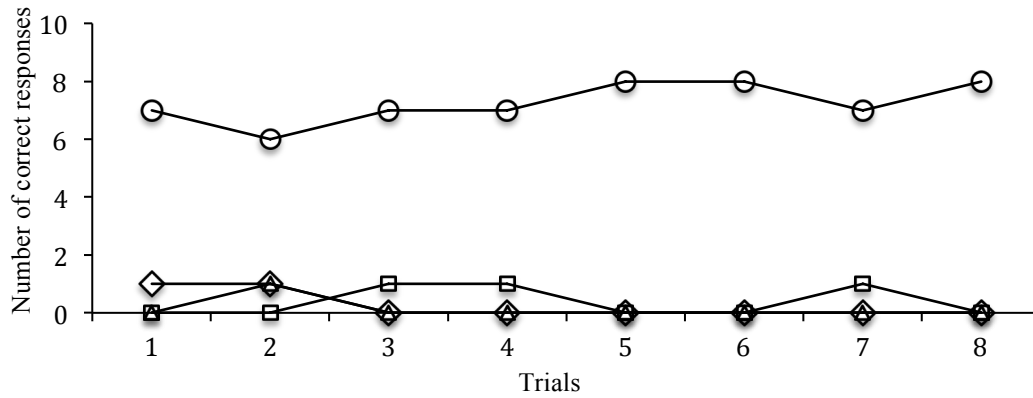| Step	Task Analysis	Participant Response Trials							
		1	2	3	4	5	6	7	8
1	Gather talis	P	P	I	G	I	I	G	I
2	Cover eyes	I	V	G	I	I	I	I	I
3	Recite quietly	I	I	I	I	I	I	I	I
4	3rd sentence	I	I	I	I	I	I	I	I
5	4th sentence	I	I	I	I	I	I	I	I
6	5th sentence	I	I	I	I	I	I	I	I
7	6the sentence	I	I	I	I	I	I	I	I
8	7th sentence	I	I	I	I	I	I	I	I
	Number of I points	7	6	7	7	8	8	7	8
	Number of G points	0	0	1	1	0	0	1	0
	Number of V points	0	1	0	0	0	0	0	0
	Number of P points	1	1	0	0	0	0	0	0

Figure 12. Number and type of prompted responses by Reuben across behaviors during shema intervention. I (open circle) = independent response; G (open square) = gesture prompt; V (open triangle) = verbal prompt; P (open diamond) = physical prompt.

Chapter Five

Discussion

Given the lack of research using evidence-based practices to teach the skills necessary for participation in community activities, the purpose of this dissertation was to examine the use of evidence-based practices in teaching people with ID to participate in a community activity within a faith community. The research addressed two questions:

1. Is a VM plus a SLP effective in teaching people with ID tasks within a faith community setting outside of regular faith community services or activities?

2. Will particular tasks taught in a faith community setting outside of regular faith community services or activities generalize to regular faith community services or activities?

Question 1

The data indicate that the VM was effective in teaching all three participants tasks within their faith communities. The VM proved easy to create and implement. The VM was recorded, edited, and played back to the participants on an iPad®. Participants showed the ability to attend to the iPad®, tapping the correct icon to begin the VM playback, and demonstrating interest in the VM. One participant, Jack, required occasional reminders to maintain his attention on the VM. This generally occurred on days when he was having difficulty maintaining appropriate social behavior (i.e., loud vocalizations and mild SIB). He was easily redirected to attend to the VM. Overall, he was attentive to the VM, occasionally pointing out his caregiver in the VM.

An SLP proved effective in enhancing the acquisition of behaviors required for participating in a faith community for two of the participants. Jack received several physical, verbal, and gestural prompts during the gathering task analysis. He also received verbal and

gestural prompts during the Liturgy of the Word task analysis. He received prompts during the Liturgy of the Table task analysis, but the prompts did not gain stimulus control over the behaviors in the least to most sequence. Rather, the prompt level required for Jack to learn the behavior varied from session to session.

Marie received a minimal number of prompts in the hierarchy of the SLP during the opening procession and for one step in the communion task analysis (i.e., bring water cruet to altar). In general, she only needed prompts during the first trial of most of the steps in her task analyses.

Although Reuben received a number of prompts during each of the three task analyses, the prompts did not gain stimulus control over the behaviors in the least to most sequence. Rather, he received a mixture of verbal and gestural prompts in order to meet criterion, in particular with step 4 of the blessing task analysis (i.e., read first half of blessing) and step 1 of the Shema task analysis (i.e., gather talis).

Overall, the use of prompts was beneficial for all three participants when they demonstrated incorrect duration, incorrect topography, or completed a step without pausing for more than 3 s, but not in the correct sequence. However, an SLP did not prove to gain stimulus control over the behaviors in the least to most sequence in most of those circumstances. Although a VM could be used alone to teach the behaviors, it would require stopping to view the VM whenever the participant performed an incorrect response. Therefore, the use of a single prompt would be more efficient in obtaining a correct response.

Question 2

The ability to generalize the behaviors learned during intervention to a real faith community service or setting is vital in order for people with ID to be able to participate

authentically in their faith communities. The data indicate that all three participants in this study were able to generalize the behaviors learned in a novel service or setting.

Jack. Jack's generalization probe took place during a regular Sunday service at St. George's a month after his last intervention trial. The service included all elements of a typical Episcopal worship service that were not present during intervention, such as other worshipers, priest, altar party, music, choir, and wine during communion. During intervention, Jack had difficulty in the Liturgy of the Word task analysis with steps that required him to stand, specifically step 4 (i.e., stand for sequence hymn) and step 6 (i.e., stand for Nicene Creed). During the generalization probe, Jack's parents and the rest of the congregation provided natural cues to stand during both steps and he did not exhibit difficulty demonstrating those behaviors. Overall, he was able to independently exhibit the behaviors necessary for participation in the service.

Marie. Marie had two generalization probes because the director of servers scheduled her to serve the day after her last intervention trial. She also had a combined maintenance and generalization probe two weeks after intervention ended. The probes were conducted during Wednesday noon masses and included all elements of a typical Roman Catholic mass that were not present during intervention, such as other worshipers, priest, altar party, and music. When Marie arrived at the church for the first generalization probe, she was told that a deacon was present for the mass and would perform steps 4-9 in the communion task analysis (i.e., setting the altar for communion). Marie was to bring the tray of communion items to the altar, hold the tray while the deacon set the altar, and return the empty tray to the credence table. After the priest gave her verbal instructions, Marie was able to adapt to the change in routine. Marie was also able to demonstrate behaviors needed to perform her duties as a server during her second

generalization probe two weeks later. That mass had the same added elements as the first generalization probe, with the addition of a different priest.

Following the completion of the study, Marie's mother contacted me to tell me that Marie wanted to be a Sunday server. Marie's mother asked for assistance in preparing a VM to teach Marie behaviors needed to be a Sunday server. We met at the church, where the director of servers showed Marie the additional behaviors required in setting the altar for communion (e.g., unrolling an altar cover before communion and rolling it up again afterwards). I demonstrated the steps for recording a simple VM with an iPhone, downloading it to a laptop computer, and saving it to a flash drive. After Marie served at a Sunday service, her mother reported that Marie was very excited about serving, especially that her sisters, who attend the university and were unable to come to the Wednesday noon mass, were able to attend the Sunday mass and see Marie serve.

Reuben. The summer schedule of the synagogue during the study did not allow conducting Reuben's generalization probe during a service. Instead, since Reuben's intervention trials were conducted at home, his generalization probes were conducted at the synagogue and included all elements present in that setting, including the bimah, Torah Ark, pews, and table. Reuben was able to perform all behaviors necessary for participation in a service, or for his future Bar Mitzvah, although he needed a verbal prompt to begin step 4 of the blessing task analysis (i.e., read first half of blessing). As with Jack, Reuben benefitted from several natural cues, such as the rabbi calling him up to the table for step 1 of the blessing task analysis and the Torah reader pointing with the yad during step 2 of the blessing task analysis and stating, "Please kiss here."

Approximately two months after the completion of the study, Reuben made his Bar Mitzvah at the synagogue. The rabbi and congregation made several accommodations and

modifications in the traditional service in order for Reuben to complete the ritual. For example, his stepmother did the Torah reading, which was a passage chosen for its emphasis on welcoming and inclusion. I was able to observe two of the three behaviors Reuben learned during the study, the talis and blessing behaviors. When Reuben put on the talis, he missed several steps, but the congregation voiced their approval of how he performed the behavior. He was able to successfully perform all the steps in the blessing task analysis, and his voice level and enunciation were appropriate to the size of the room.

Quality of Life

Quality of life is important in the lives of people with ID (Ault, et al., 2013a). The strength of religious faith is a strong indicator of quality of life (Boehm et al., 2015). As Wolfensberger (1983, 2000) stated, when a person with ID has more perceived social value and is encouraged to assume roles and behaviors that are considered desirable and appropriate, expectations are increased and the person is likely to achieve more, thus improving the person's quality of life. This study demonstrated evidence-based strategies that can be used to create authentic inclusion for people with ID in faith communities, allowing them to participate in their faith communities rather than simply attending services. Additionally, one participant was able to assume a leadership role in her congregation. Each of these outcomes improved the participants' perceived social value, as demonstrated in responses to social validity interviews.

Social Validity

Social validity data were obtained in order to determine the social significance of the dependent variable and the importance of the change in the dependent variable as a result of the intervention (Gast, 2014; Gast & Ledford, 2014). I interviewed parents, faith community leaders and members, and one participant regarding their perceptions of the participants' ability to perform the specific behaviors and the importance of including people with ID in faith

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community services or activities. I also asked them to reflect back to their feelings about having a person with an ID perform the specific behaviors and the importance of including people with ID in faith community services or activities prior to the study.

Jack. Jack's parents participated in an interview. Prior to the study, they were enthusiastic about his participation in the study, although his mother expressed concern about how much he understood about his faith. After the study, they were pleased with how well he did in during a Sunday morning service. They stated that it was important to them that Jack learn to participate in the service as well as to begin learning the basic concepts of their faith. They were appreciative of the St. George's community for their inclusive attitude.

The parish priest completed the interview and stated that St. George's was an inclusive and welcoming church. She pointed out that the building, itself, was constructed to allow for free movement between the nave and the narthex, with windows between the two areas and a pew and rocking chairs in the narthex to accommodate parents with small children or people who had difficulty remaining quiet during the service. She said that she was not aware of any disruptive behavior on Jack's part during the service and felt that he had participated appropriately when he came forward for communion. She felt that Jack's training was helpful in acquainting him with the order of the service and looked forward to his regular attendance.

A member of the congregation, a lay Eucharistic minister who portrayed the priest in the VM, also participated in an interview. She expressed her opinion that it was important for people with disabilities to be included in a parish and was enthusiastic about helping Jack with his involvement in the church. She was serving on altar the day Jack did his generalization probe and stated that she tried to watch him during the service and thought his participation was appropriate and similar to that of other parishioners. She did not feel that Jack had displayed any behaviors that interfered with the service.

Marie. Because Marie was able to generate spontaneous comments and responses, she was the only participant to complete a social validity interview. She stated that she loved serving and would like to learn to be a Sunday server. She indicated that she felt she had learned to do the tasks required of a server in her church and was able to do them in the same manner as other servers. She liked using the VM to learn to be a server and thought that using VMs would be a good way to learn to do other things. She described serving as exciting and fun and said that she made a lot of new friends.

Marie's mother also completed an interview. She stated that Marie completed her server duties in the same manner as other servers and that she wanted Marie to continue to serve on a regular basis. She said that it had always been the family's intention to have Marie get involved at church and that it is important for people with intellectual disabilities to be involved in their faith communities. She said she loved seeing Marie participate and pointed out how excited Marie was to be able to serve.

Two members of the faith community, a priest and the director of servers, completed interviews. They both indicated that Marie demonstrated the ability to perform the server duties the same as it is always done. The director of servers was able to spot minor differences, but said that was because he was aware of the usual training. He said that once Marie was trained, she was able to perform duties in the same manner as other servers and was able to assume a leadership position in doing so. He was pleased with how quickly Marie learned the server behaviors with the VM and expressed interest in using VM as a training tool for all servers.

Both the priest and the director od servers stated that they wanted to see Marie serve on a regular basis. They both mentioned that other members of the parish act as server, including a woman with Down syndrome, so it seemed natural for Marie to become a server. One stated that he was more determined to have Marie serve after watching her serve. The other said that he was

more aware that everyone has a gift to offer and that the gifts are not the same. He stated, "All of us are called by God to become all that God wants us to be. I believe that if we are truly a people of faith we should include, support and encourage all who wish to be part of our faith community."

Reuben. Reuben's father and stepmother were interviewed and stated that it was important to them for Reuben to learn behaviors that could be used in services as well as for his Bar Mitzvah. They said that Reuben had an understanding that he was Jewish and it was important to them that he participate to the best of his ability in services and activities in the synagogue. Initially, they expressed concern about the baseline phase of the study, because they were accustomed to therapeutic interventions and curricula that incorporated errorless learning. They felt the baseline probes, which used a single opportunity probe format (i.e., the session ended after participant made one mistake or did not respond; Collins, 2012), were causing Reuben to experience failure. I explained the importance of establishing a baseline in order to determine what Reuben already knew and what we would need to teach him. Once the intervention phase began and Reuben received prompts for errors he made in the task analyses, Reuben's parents expressed satisfaction with the trial sessions and the progress he was making. His stepmother, who was most often present during the intervention trials, was particularly excited about his progress with the Torah blessing and anticipated preparing for his Bar Mitzvah.

Reuben's stepmother later shared that she and Reuben's father were also concerned at first that I did not know Hebrew or many Jewish traditions. However, she stated that after the study they realized that the emphasis of the study actually was not about scholarship, but inclusion. She said that if Reuben had not participated in the study he would not have been able to make his Bar Mitzvah.

Reuben's rabbi was also interviewed and was enthusiastic about Reuben's participation in the study and the implications it had for Reuben's ability to be a more active participant in services as well as the possibility of him making his Bar Mitzvah. The rabbi expressed several ideas for making accommodations for Reuben's Bar Mitzvah, such as choosing narrative Torah readings, which are concrete and tell a story, rather than prophetic readings, which are less concrete. He also expressed interest in using VM to help Reuben prepare for his Bar Mitzvah. He expressed his belief that it was important that people with disabilities be able to participate as fully as possible in the synagogue.

Implications for Practitioners

Special educators and related service providers are often members of faith communities and can share their knowledge with members of their congregations. Special educators are familiar with the supports, accommodations, and strategies that could benefit young adults with ID in community settings, including faith communities (Carter et al., 2016). As demonstrated by Baggerman et al. (2015), a volunteer in a faith community can be taught to implement evidence-based strategies. In particular, the strategies used in this study, a VM and SLP, are easy to implement. The availability of handheld devices with video capabilities allows most individuals to create a VM with little difficulty, as Marie's mother learned to do in order to teach Marie additional tasks.

In addition to volunteers, such as religious education teacher, other members of faith communities could learn to create and use VMs. For example, members of a youth group could be encouraged to create a VM in order to allow a peer with ID to join in activities and services within the faith community. Adolescents and young adults are often experienced in using current technology, and a project incorporating technology to include peers with ID can provide an opportunity for engagement

Contribution to the Literature

The current study added to the literature on using VM and an SLP to teach behaviors to people with ID in several ways. First, a majority of previous VM studies included participants with ASD (Acar & Diken, 2012; Delano, 2007; McCoy & Hermansen, 2007; Shukla-Mehta, Miller, & Callahan, 2010). This study included a participant with Down syndrome, in addition to participants with ASD, in order to examine the effect of VM and an SLP on the acquisition of behaviors needed to participate in a community activity.

Second, only six previous studies described the use of VM to teach leisure skills and none of the studies addressing leisure skills involved adults, nor did they teach behaviors necessary for participation in community-based leisure activities, such as participation in a faith community. This study included young adults and an adult and taught them behaviors needed in order to participate in faith communities.

Third, this study demonstrated the effectiveness of several procedural parameters, including the use of peer models and a combination of spectator and POV perspective, with POV used to emphasize important details in the task analysis. Additionally, this study made use of a handheld device (i.e., iPad) to record, edit, and play back the VM. Handheld devices provide flexibility and are particularly beneficial if a VM is to be used in a community setting, since they are relatively unobtrusive, can be easily carried into most settings, and allow access at all times.

Fourth, although the most frequently used additional independent variable in previous studies is a SLP. However, this accounted for only 7% of studies. Therefore, this study contributed to the literature by analyzing the effect of VM plus SLP on the acquisition of behaviors by people with ID.

Finally, although VMs are often used in school settings, the emphasis on transition and quality of life across the lifespan (AAIDD, 2009; TASH, 2013) makes it important to conduct

research on the use of VM in all the settings people with ID may encounter. This study demonstrated that VMs can be used to teach people with ID to participate in a community activity. Most importantly, although some researchers have found participation in a faith community to be one of the most commonly accessed community settings for people with ID (Kleinert et al., 2007), there are no studies in the literature that have used VMs to teach people with ID to participate in faith communities.

Limitations

There were limitations in this study. First, an outside investigator conducted the study, rather than a person within the faith communities. This was particularly evident with Reuben, when his parents expressed concern that the researcher was not familiar with Hebrew or the traditions and rituals of the Jewish faith.

Second, the underlying purpose for conducting this study was to enable people with ID to experience meaningful inclusion in their faith communities. However, one of the participants did not have the opportunity to demonstrate the behaviors he learned in an actual service during the course of the study. After the study concluded, however, he had the opportunity to demonstrate two of the behaviors during his Bar Mitzvah service.

Finally, I used single opportunity probes during the baseline phase. The use of single opportunity probes may have underestimated the number of steps the participants actually knew.

Future Research

This study offered initial evidence that VM and an SLP are effective in teaching people with ID behaviors necessary for participation in a faith community. However, there are several considerations for future research. First, because of the limited types of faith communities represented by the participants in this study, future research should include a wider

representation of faith communities, including non-liturgical Christian (e.g., Baptist, Pentecostal, Latter Day Saints, Jehovah's Witness), Islam, Hinduism, Buddhism, and New Age.

Second, two of the three participants in this study were identified as having ASD. Because VM has been used extensively to teach people with ASD, future studies should include participants with classifications in addition to ASD.

Third, the SLP used in most of the steps of the task analyses in this study did not prove to gain stimulus control over the behaviors in the least to most sequence. Future research should include other prompting strategies to enhance the acquisition of behaviors required for participating in a faith community.

Fourth, most clergy surveyed indicated that they did not receive training in seminary about disability and inclusion (Slocum et al., in preparation). Future research should investigate how to include training in seminaries and how to provide additional training to clergy in the field. Researchers might explore methods of delivering disability education to seminarians, such as the use of special educators as adjunct instructors or the use of online coursework developed specifically for seminaries and working clergy.

Finally, it is important to involve members of faith communities in creating an authentically inclusive community, rather than relying on outside persons. Only one study (Baggerman et al., 2015) demonstrated that a faith community volunteer was able to learn and use evidence-based strategies in a faith community setting. Future studies should teach members of the involved faith communities to implement such strategies.

Conclusion

In conclusion, the current study demonstrated the effectiveness of a VM and an SLP in teaching people with ID to participate in a community activity, specifically a faith community. The data indicate that all three participants were able to reach criterion in three task analyses. An

SLP proved effective in enhancing the acquisition of behaviors required for participating in a faith community for two of the participants, although another type of prompt, such as CTD, may prove to be effective. Finally, all three participants were able to generalize the behaviors learned in a novel service or setting.

The strategies included in this study can improve the strength of religious faith and enhance the quality of life of people with ID (Ault, et al., 2013a; Boehm et al., 2015). There is a significant discrepancy between what faith community leaders perceive as a welcoming and inclusive attitude and the reality experienced by parents of children with disabilities. The results of this study demonstrate that evidence-based strategies can help eliminate that discrepancy.

Appendix A

Settings

Jack

Marie

Cross Stand

Choir

Pulpit

Altar

Cabinets

Sacristy
(vesting room)

Pews

Cross Stand

Nave

Narthex   To offices and
classrooms

Reuben (Intervention)

Appliances

Shelves

Counter

Table
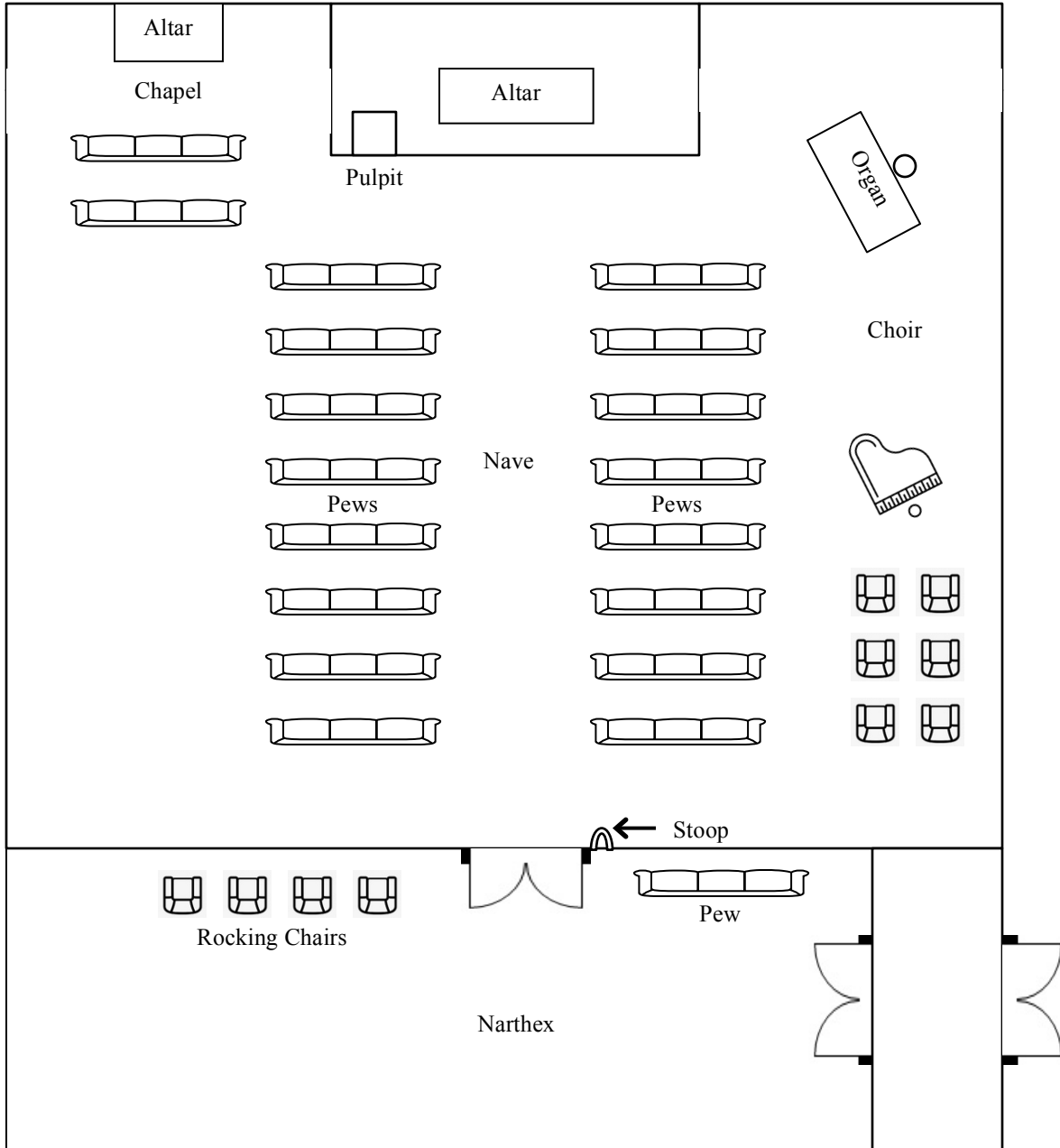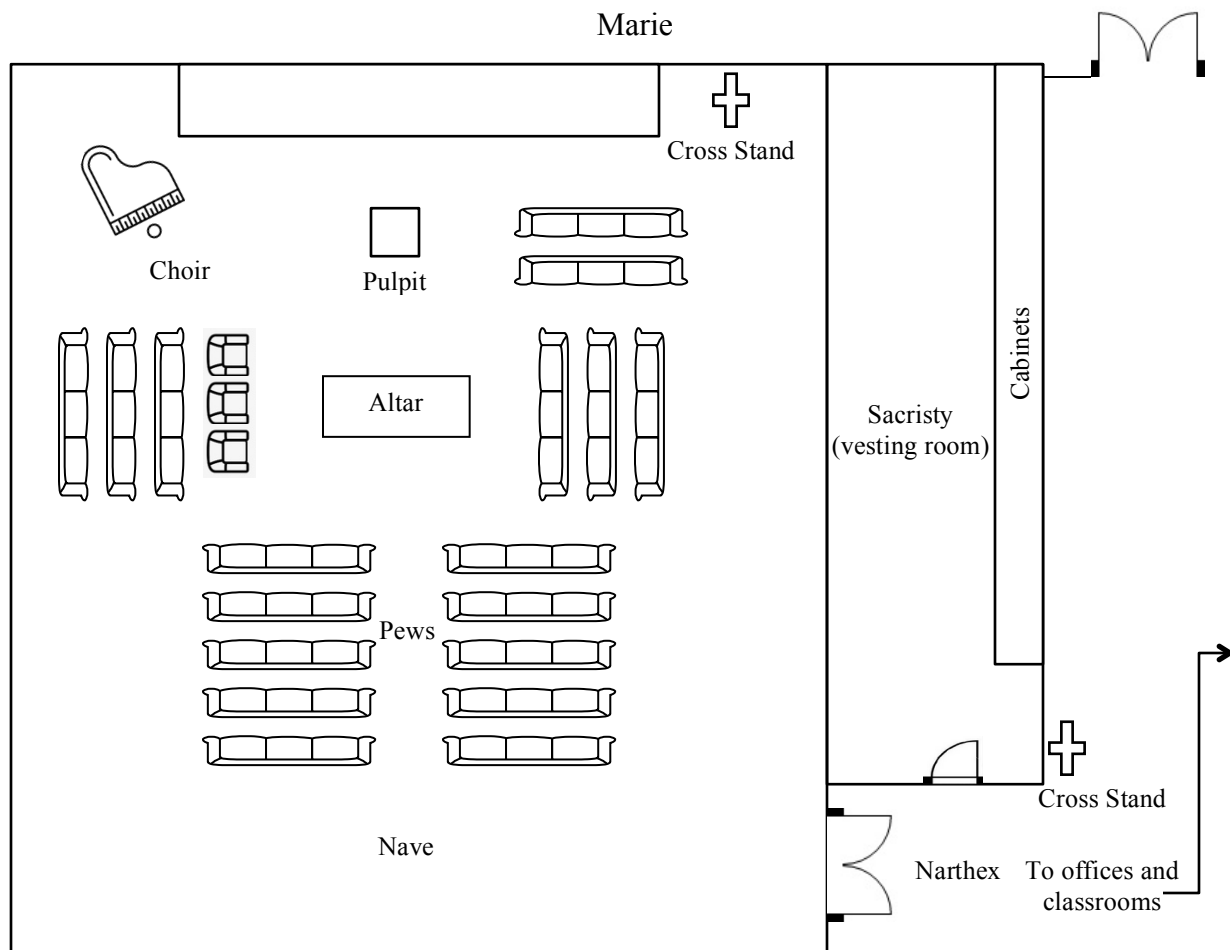
Kitchen

Reuben (Generalization)

Torah Ark

Bimah

Table

Pews

Pews

Sanctuary

Talis Rack

To offices and
classrooms
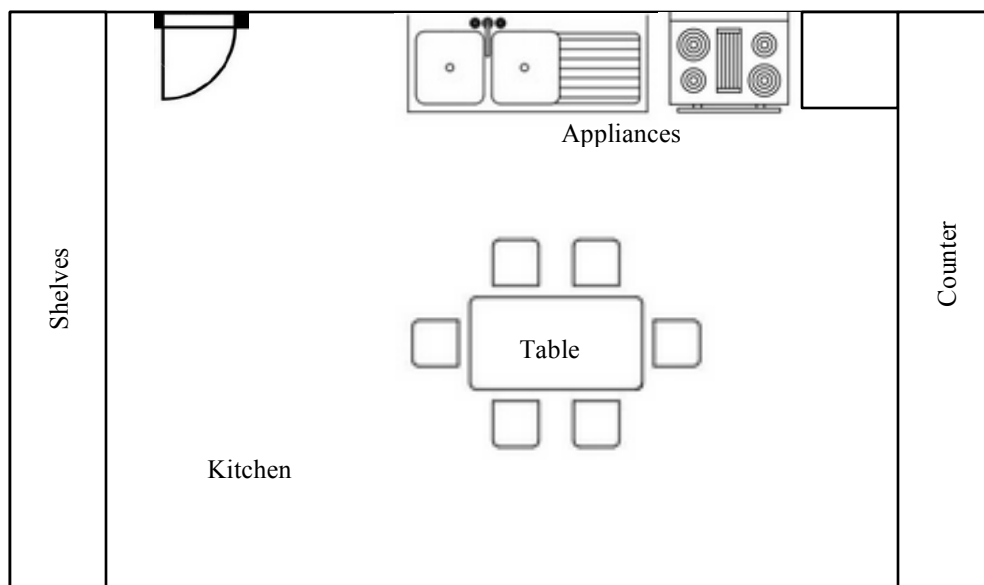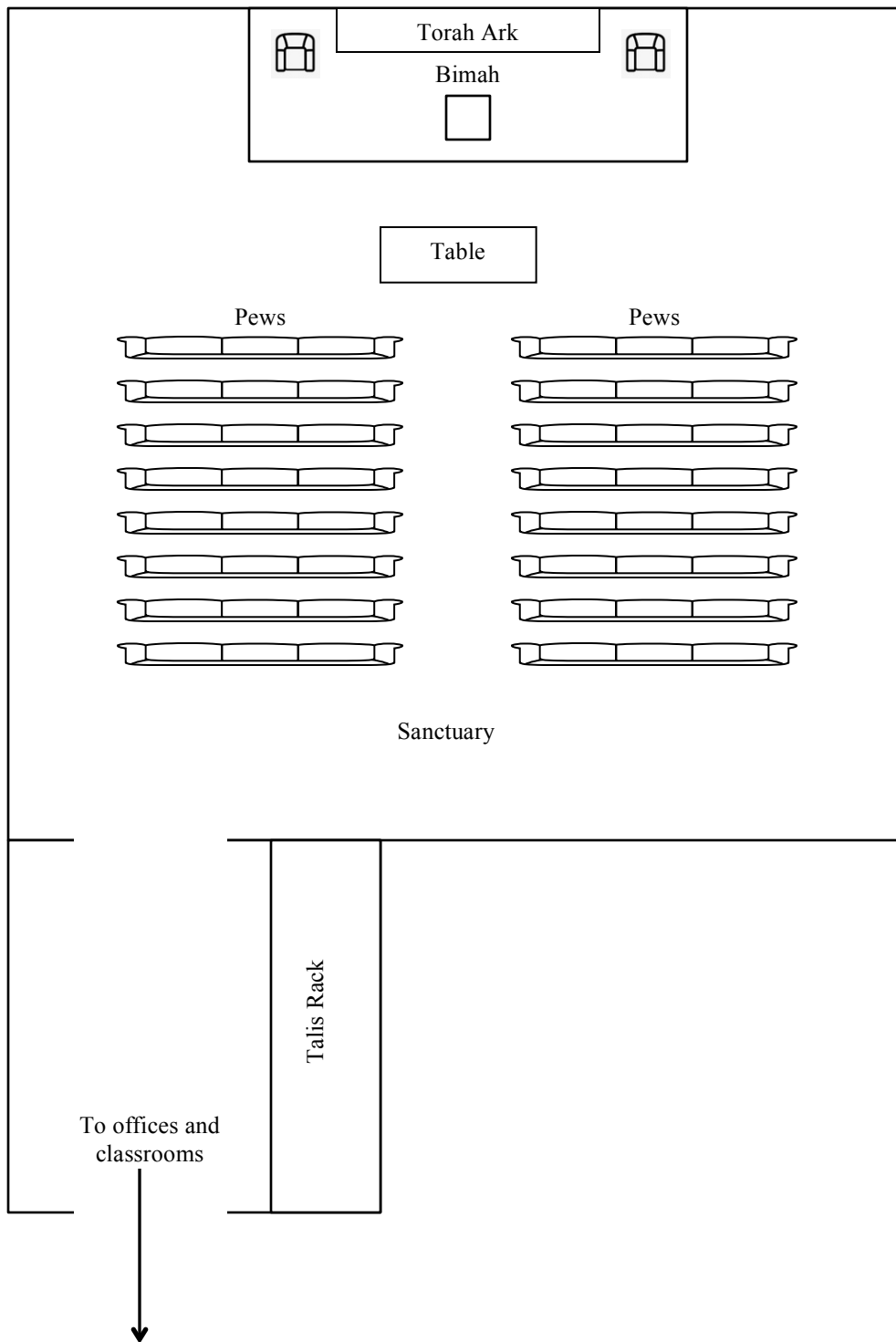
Appendix B

Glossary of Faith Community Materials

Alb: Long white vestment or robe worn by priests and altar servers in Christian churches (i.e., Episcopal, Roman Catholic).

Altar cross: Small cross placed on the altar during Eucharistic prayers prior to communion in Christian churches.

Torah Ark: Curtained cabinet in which the Torah scrolls are kept in a synagogue.

Bimah: Raised reader's platform in a synagogue.

Chalice: Goblet or stemmed cup used to hold wine during communion in Christian churches, often decorated.

Cincture: Rope belt tied around the waist of an alb in Christian churches. May be colored to match the Liturgical season.

Communion cup: Additional, simpler stemmed cups used for wine during communion in Christian churches.

Corporal: White cloth spread on the altar during the Eucharistic prayer prior to communion in Christian churches.

Credence table: A table behind the altar in a Christian church which holds communion items.

Host: Flat unleavened bread used for communion in Christian churches.

Kippah: Skullcap worn by men during Jewish services.

Lavabo bowl: Bowl used by the priest for ceremonial hand washing prior to communion in Christian churches.

Lavabo towel: White cloth used by priest to wipe hands after ceremonial hand washing in Christian churches.

Lay Eucharistic minister: A non-ordained person who assists the priest in serving communion in

Christian churches.

Narthex: The entrance area of a church.

Nave: The central area of a church, which accommodates the congregation.

Paten: Small plate used to hold hosts during communion in Christian churches.

Processional cross: Tall ceremonial cross carried in processions into and out of the nave during

Christian services.

Purificator: White cloth used to wipe the rim of the chalice during communion in Christian

churches.

Talis: Prayer shawl worn by men during Jewish services.

Tzittzit: Decorative fringe on a talis.

Yad: Jewish ritual pointer, also known as a Torah pointer, used by the reader to follow the text

during the Torah reading.

Appendix C

Data collection sheet for Jack's gathering task analysis

E1 Intervention

Participant: _____   Instructor: _____

Objective: Given a church bulletin, prayer book, hymnal, and the verbal direction to begin church, the participant will independently

Task Analysis: Gathering	Sessions																			
	1				2				3				4				5			
	I	G	V	P	I	G	V	P	I	G	V	P	I	G	V	P	I	G	V	P
1. Enter church																				
2. Get bulletin																				
3. Sign of the Cross																				
4. Go to pew																				
5. Bow																				
6. Sit																				
7. Prelude																				
8. Stand for procession																				
9. Opening acclimation																				
10. Sit																				

Task Analysis: Gathering	Sessions																			
	6				7				8				9				10			
	I	G	V	P	I	G	V	P	I	G	V	P	I	G	V	P	I	G	V	P
1. Enter church																				
2. Get bulletin																				
3. Sign of the Cross																				
4. Go to pew																				
5. Bow																				
6. Sit																				
7. Prelude																				
8. Stand for procession																				
9. Opening acclimation																				
10. Sit																				

proceed 5 out of 5 times.

Key: + = correct independent response, - = incorrect response, G = gesture prompt, V = verbal direction, P = physical guidance

Summary										
Session	1	2	3	4	5	6	7	8	9	10
# independent X 4										
# gesture X 3										
# verbal X 2										
# physical X 1										

Appendix D

RC1 IOA/Procedural Reliability Check
Baseline/Probe

Step	Yes	No
Provides attentional cue		
Ensures attentional response		
Records participant response		
Ends session if participant responds incorrectly		
Thanks participant for participating		

Task Analysis: Opening	I	Provides 3 s response interval after each prompt		Provides correct consequences	
		Yes	No	Yes	No
1. Get out alb					
2. Put on alb					
3. Choose belt					
4. Put on belt					
5. Get cross					
6. Opening procession					
7. Go around altar					
8. Go to cross stand					
9. Put cross in stand					
10. Get book					
11. Put book between chairs					
12. Stand					
13. Get book and hold					
14. Sit down					

Key: I = independent response, + = correct independent response, - = incorrect response, 0 = no response

Total Correct: _____

Total Correct: _____ X 100 = _____%
                              Opportunities: 33

Total Agreed: _____ X 100 = _____%
Agreed+Disagreed:

Summary	
# independent X 4	

J1 IOA/Procedural Reliability Check
Intervention

Step	Yes	No
Provides attentional cue		
Ensures attentional response		
Provides video model		
Ensures attentional response to VM		
Provides task direction: "Now you try it."		
Provides SLP as needed (below)		
Records participant response		
Thanks participant for participating		

Task Analysis: Talis	I	G	V	P	Provides 3 s response interval after each prompt		Provides correct consequences	
					Yes	No	Yes	No
1. Pick up talis								
2. Say blessing								
3. Put on head								
4. Cover face								
5. Uncover face								
6. Put on shoulders								
7. Finish								

Key: + = correct independent response, - = incorrect response, G = gesture prompt, V = verbal direction, P = physical guidance

	Summary	
Total	# independent X 4	
	# gesture X 3	
Total	# verbal X 2	
	# physical X 1	

Correct: _____

Correct: _____ X 100 = _____%
Opportunities: 22

Total Agreed: _____ X 100 = _____%
Agreed+Disagreed:

Appendix F

Social Validity Interview

Person with ID

Interviewer: Ask the questions, using the bulleted prompts, if needed, to get more information.

I want to know what you think about how you did with [chained behavior].
- Do you think you did it the same as it is always done?
- Do you think you did anything different?
- Would you like to continue to do [chained activity] on a regular basis?
- Did you like using the video model to learn to do [chained activity]?
    - Did it seem easy/hard to learn to do [chained activity] with the video?
    - Do you think this would be a good way to lean to do other things?

Is there anything else you would like to say about doing [chained activity]?

Do you think that it is important to participate in services or activities at [Faith Community]?
- What did you think about it before you learned to do [chained activity]?
- What do you think about it since you have learned to do [chained activity]?

Is there anything else you would like to say about participating in activities at [Faith Community]?

Appendix G

Social Validity Interview

Parent/Caregiver/Faith Community Leader/Member of Faith Community

Interviewer: Ask the questions, using the bulleted prompts, if needed, to get more information.

I want to know what you think about how [Name] did with [chained behavior].
- Did she/he do [chained behavior] the same as it is always done?
- Did you notice any differences?
  - Did the differences have any effect on your ability to worship or enjoy the activity?
- Would you like to see [Name] continue to do [chained activity] on a regular basis?

Is there anything else you would like to say about [Name] doing [chained activity]?

Do you think that it is important for people with ID, like [Name], to participate in services or activities at [Faith Community]?
- What did you think about it before you saw [Name] do [chained activity]?
- Has your impression changed since you have seen [Name] do [chained activity]?

Is there anything else you would like to say about people with ID participating in faith communities?

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VITA

VICTORIA SLOCUM

EDUCATION

2011-Present	University of Kentucky	Doctoral Candidate in Special Education
2011	Morehead State University	Graduate Studies
2001	University of Wisconsin - Milwaukee	Certification in Cognitive Disabilities Certification in Behavior Disabilities
1996	University of Wisconsin - Milwaukee	Certification in Learning Disabilities
1981	University of Wisconsin - River Falls	BS in Art Education

CERTIFICATIONS

Kentucky	KLB Learning and Behavior Disorders KMS Moderate and Severe Disorders KAR Art

UNIVERSITY TEACHING

Summer 2013 EDS 514: Educational Technology.

Fall 2013 EDS 530: Moderate and Severe Disabilities.

Spring 2014 EDS 549: Methods for Students with Moderate and Severe Disabilities.

Fall 2014 EDS 375: Introduction to Education of Exceptional Children.

Spring 2015 EDS 375: Introduction to Education of Exceptional Children.

Fall 2015 EDS 375; Introduction to Education of Exceptional Children.

Spring 2016 EDS 547: Collaboration and Inclusion in School and Community Settings.

Fall 2016 EDS 547: Collaboration and Inclusion in School and Community Settings.

Fall 2016 EDS 632: Leadership Practicum: Writing, Research, Advocacy. Instructor.

UNIVERSITY TEACHING: GUEST LECTURE

Slocum, V. (2013, April). *IEP family collaboration, independent learning strategies, and peer mediated support strategies.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2014, April). *Assessment and differentiation.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2014, December). *Sex education and people with intellectual disabilities.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2015, April). *Components of successful inclusion.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2015, December). *Sex education and people with intellectual disabilities.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum V. (2016, March). *Students who are Deaf and hard of hearing.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2016, September). *Sexuality and relationship education and people with intellectual disabilities.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2016, November). *Beyond Birds and Bees: Sexuality and relationship education and people with autism spectrum disorder.* Lecture presented at the University of Kentucky, Lexington, KY.

Slocum, V. (2016, December). *Transition.* Lecture presented at the University of Kentucky, Lexington, KY.

PROFESSIONAL EXPERIENCE

2012-Present   University of Kentucky

2010-2012   Paul Laurence Dunbar High School - Lexington KY

2009-2010   Southern Elementary School - Lexington KY

2007-2009   Mercer County Senior High - Harrodsburg KY

2003-2007   Brown Deer High School - Brown Deer WI

2001-2003   Greenfield School District - Greenfield WI

1992-2001   Willowglen Academy - Milwaukee WI

RESEARCH: STUDIES CONDUCTED

Slocum, V. (2011). *The effect of video modeling on tooth brushing in high school students with Down syndrome.* Single case study conducted for EDS 601 project.

Slocum, V. (2012). *The effect of video prompting on dental care in a high school student with Down syndrome.* Single case study conducted for EDS 630 project.

RESEARCH: IN PROGRESS

Bausch, M., Slocum, V., Kinyanjui, B., Rhodes, A., & Ault, M. (2014). *Undergraduate students' attitudes toward the use of social media in the classroom.* Survey conducted for EDS 701 project.

Slocum, V., Ault, M., & Collins, B. (2015). *Perceptions of clergy on inclusion of people with disabilities in their congregations.* Survey conducted for EDS 789 Project.

Slocum, V. (2016). *Using video modeling and a system of least prompts to teach people with intellectual disability to participate in faith communities*. Dissertation.

JOURNAL ACTIVITIES

2014   Guest reviewer, Tech in Action manuscript for the *Journal of Special Education Technology.*

PUBLICATIONS: ARTICLES IN REFEREED JOURNALS

Baggerman, M. A., Ault, M., Collins, B., Spriggs, A., & Slocum, V. (2015). The effect of coaching on a faith community volunteer's use of effective teaching behaviors. *Research and Practice for Persons with Severe Disabilities, 40,* 294-306 doi:10.1177/1540796915602479

Slocum, V. (2016). Recommendations for including people with intellectual disabilities in faith communities*. Christian Education Journal, 13,* 109-126

PUBLICATIONS: SUBMITTED FOR PUBLICATION

Slocum, V. (2013). *Separate but (not) equal: Including people with intellectual and other disabilities if faith communities.* Manuscript submitted for publication.

Harkins Monaco, E. A., Slocum, V., & Eyres, R. M., (2016). *To puberty and beyond: Sexuality education for ALL students.* Manuscript submitted for publication.

PUBLICATIONS: IN PROGRESS

Slocum, V. (2015). *Procedural parameters in video modeling: A review of the literature*. Manuscript in preparation.

Slocum, V. (2015). *Lights, camera, learn: A step-by-step process for creating a video model*. Manuscript in preparation.

PRESENTATIONS AND CONFERENCES

Slocum, V. (2012, March). *The effect of video modeling on tooth brushing in high school students with Down syndrome*. Spring Research Conference, Louisville, KY.

Slocum, V. (2012, November). *The effect of video modeling on tooth brushing in high school students with Down syndrome*. Kentucky Council for Exceptional Children Exceptional Children's Conference, Louisville, KY.

Ault, M. J., & Slocum, V. (2013, November). *They're everybody's kids: Collaboration and inclusion in school settings.* Kentucky Council for Exceptional Children Exceptional Children's Conference, Louisville, KY.

Slocum, V. (2013, November). *Welcome regardless: Recommendations for including people with intellectual disabilities in faith communities.* Kentucky Council for Exceptional Children Exceptional Children's Conference, Louisville, KY.

Slocum, V. (2014, February). *Welcome regardless: Recommendations for including people with intellectual disabilities in faith communities.* Episcopal Diocese of Lexington Annual Convention, Covington, KY.

Ault, M. J., & Slocum, V. (2014, November). *They're everybody's kids: Collaboration and inclusion in school settings.* Invited presentation, Kentucky Council for Exceptional Children Exceptional Children's Conference, Louisville, KY.

Slocum, V. (2014, November). *K-PREP, PARCC, Smarter Balanced, and PAR*. Kentucky Council for Exceptional Children Exceptional Children's Conference, Louisville, KY.

Slocum, V. (2014, November). *Sex education and people with intellectual disabilities.* Kentucky Council for Exceptional Children Exceptional Children's Conference, Louisville, KY.

Rhodes, A. L., & Slocum, V. (2015, March). *Applications of a changing curricular focus on the ecological curricular framework.* Special Education Research Seminar, Bloomington, IN.

Ault, M. J., Carter, E., Collins, B. C., Jimenez, B., & Slocum, V. (2015, December). *Efforts to improve the inclusiveness of faith communities.* TASH Conference, Portland, OR.

Slocum, V. (2016, April). *Sex education and people with intellectual disabilities.* Council for Exceptional Children Special Education Convention, St. Louis, MO.

Jimenez, B., Slocum, V., Baggerman, M., & James, M. (2016, June). *Efforts to improve the inclusiveness of faith communities.* American Association on Intellectual and Developmental Disabilities Conference, Atlanta GA.

Slocum, V. (2016, June). *Beyond birds and bees: Sexuality and relationship education for people with autism and developmental disability.* Autism Society of the Bluegrass, Lexinton, KY.

Slocum, V., Eyres, R. M., & Harkins Monaco, E. A. (2016, November). *To puberty and beyond: Sexuality education for ALL students.* Council for Exceptional Children's Teacher Education Division National Conference, Lexington, KY.

SERVICE

August, 2012   College of Education Back-to-School Fair. University of Kentucky College of Education and department service.

April, 2013   Math Night. Fayette County Schools Jessie Clark Middle School community service.

August, 2013   College of Education Back-to-School Fair. University of Kentucky College of Education and department service.

April, 2014   Student CEC Light it Up Blue. University of Kentucky College of Education and department service.

August, 2014   College of Education Back-to-School Fair. University of Kentucky College of Education and department service.

April, 2015   Student CEC Light it Up Blue. University of Kentucky College of Education and department service.

August, 2015   College of Education Back-to-School Fair. University of Kentucky College of Education and department service.

April, 2016   Student CEC Autism Awareness Fair. University of Kentucky College of Education Department service.

August, 2016   College of Education Back-to-School Fair. University of Kentucky College of Education and department service.

November, 2016 Council for Exceptional Children's Teacher Education Division National Conference. University of Kentucky College of Education and department service.

2014-Present   Student representative for University of Kentucky MSD Teacher Education
Program Committee.

AWARDS

September, 2013   John Edwin Partington and Gwendolyn Gray Partington Scholarship

April, 2016   Council for Exceptional Children's Division on Autism & Developmental
Disabilities' (DADD) 2016 Herbert J. Prehm Student Presentation Award

MEMBERSHIPS

2012-Present   Omicron Delta Kappa National Leadership Honor Society
2007-Present   Council for Exceptional Children
2015- Present   TASH
2007-2011   National Alliance on Mental Illness