

Increasing Technology Supports for Individuals with Disabilities

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Author Note

I have no conflicts of interest to disclose.

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Abstract

Occupational therapists (OTs) are qualified to recommend forms of technology based on an individual's specific needs to enhance occupational performance. If technology is facilitating and promoting independence, it is referred to as assistive technology (AT). The use of technology, specifically smart devices within a home, provides an environment where an individual can easily be successful without the help of a physical person. It is determined that individuals with intellectual and developmental disabilities that utilize smart technologies have positive work-related outcomes, increased self-determination and well-being, and participate in more activities, which is supported by literature. Thus, the Village of Merici identified that they would like to incorporate smart technologies more frequently in the lives of adults with I/DD to facilitate independence when staff and/or family is not available. However, barriers to technology include the lack of time, the lack of awareness of devices, and the lack of appropriately identifying technologies for an individual's skill level. The purpose of this project was to identify technology supports and increase the use of technology in the everyday lives of individuals with I/DD. The capstone student provided the Village of Merici with educational resources, technology supports based on assessment outcomes, and in-services to increase the knowledge and awareness of technology within this setting. The technology programming was supported by positive responses from the post-survey following the in-service. Based on the barriers, the capstone student recommends additional in-services and technology sessions for hands-on learning experience to sustain the technology program.

Keywords: intellectual disabilities, assistive technology, independence

Increasing Technology Supports for Individuals with Disabilities

Occupational therapy (OT) practitioners have the knowledge, skills, and partnerships with other professions to provide appropriate services related to technology and environmental interventions. Technology and environmental interventions include the wide range and combination of technology, environmental interventions, and reasonable accommodations needed for individuals. Occupational therapists offer a holistic lens and consider the contexts in which people engage in to support participation and overall quality of life. This lens allows OTs to customize, adapt, modify, and apply new or existing technologies and environmental modifications into an individual's daily life based on specific needs (Hammel et al., 2010). Through the occupational therapy process, OTs complete an activity analysis to meet the demands of each client's desired occupations and consider tools that can be used to help increase, maintain, and/or improve one's functional capabilities (American Occupational Therapy Association [AOTA], 2020). If the tools are facilitating occupational performance, they become a form of assistive technology. OTs recommend the most appropriate form of assistive technology that match the client's abilities, preferences, environmental factors, and barriers to technology to create productive outcomes (AOTA, 2015). With technology, environmental modifications, and accommodations, those with or without disabilities can be fully supported to participate in their daily lives and engage within the community if accessible (Hammel et al., 2010).

The Village of Merici is a not-for-profit organization in Indianapolis with a mission to foster independence development and assure purpose filled lives for adults with developmental disabilities. The Village of Merici is a service provider for Merici Village apartments and residents around the Indianapolis community, in addition to the newly developed North End

Apartments in Carmel, Indiana. There was a need for an inclusive community setting that allowed adults with developmental disabilities to live as independently as possible and experience responsibilities. The Village of Merici accomplished this need by building and sustaining a neighborhood village which offers a continuum of supports and options in all areas of living including residential, occupational, educational, spiritual, and social (*Village of Merici – “I Am Home,”* n.d.).

The Village of Merici has the resources and funds to access various forms of technology to support residents of the Merici Village apartments, the clients in the community, and the upcoming 40 apartments in the North End community (C. Renie, personal communication, January 9, 2023). Some residents and clients of Village of Merici already have technology supports, but it is clear they are not being used to their full potential based on the executive director’s comments. The executive director is an occupational therapist that has experience in the school setting, has a son with an intellectual disability, and is familiar with the benefits that technology could offer to those with intellectual and developmental disabilities (I/DD) living alone. The staff identified barriers including lack of knowledge on the most common and modern forms of technology, limited amount of time with the clients to set up and learn how to use technology, and the knowledge of identifying appropriate technology for the individual based on their skill level. Based on these barriers, an OT student is well suited to complete this project due to overall knowledge of environmental and task modifications, body structures and functions, and holistic lens. The purpose of this doctoral capstone project was to locate specific technology supports, research the skills and accommodations of those specific supports, and develop programming with an educational component that can benefit staff and clients. Implementing

technology into this population is essential to improving independence, engagement in preferred occupations, and overall quality of life (Damiamidou et al., 2018).

Needs Assessment

This needs assessment process began by identifying the gap within the Village of Merici during this capstone student's first course. To identify all possible needs, the process was broken down into two phases, Phase I and Phase II. Phase I began with an initial meet and greet at the site. After the possibilities for a capstone project were stated in Phase I then evolved into a more in-depth exploration of the site by completing community and service profiles. After gaining a sense of the community and site, the needs assessment process moved onto phase II which included one other interview via zoom with the site mentor and program director to discuss all possible projects and areas that could be targeted. In phase II, a capstone project idea regarding technology was mentioned and key stake holders were identified. Once on-site the capstone student completed additional interviews with partners for the new North End community.

Phase I

Community profile. The Village of Merici is located in Lawrence Township, which is in Indianapolis, Indiana. Indianapolis is a large area in central Indiana that has a population of close to one million people. In Lawrence Township specifically, there is a large well-known park, a YMCA, and Community Hospital North located 6 miles away. The Village of Merici is close to I-465, a major interstate in Indianapolis. This is all important information to note due to proximity to the site.

Service profile. At the Village of Merici, the population consists of adults with intellectual and developmental disabilities from the age of 21-60 years old that are living on site in apartments or other places around the city. These clients are from all over Indiana and must

apply to live on site, as there is a waitlist for those wanting to obtain an apartment. Resources are given by Village of Merici to promote occupational engagement among the population of adults living in the apartments and to teach the clients living in the community about important topics. There are a wide variety of topics through their Health and Community Matters project that are held for anyone to attend. The project has topics surrounding music therapy, nutrition, financial management, sexuality, gardening, knitting, and many more that clients can attend and participate in. There is a fully functional commercial kitchen within the Merici Village Apartments to help train individuals for jobs, as well as a community laundry room to promote engagement in the residential community.

Phase II

Site Interview. Interviews were arranged between site and capstone student for introductions and to discuss possible capstone projects. After becoming familiar with the site, a discussion was held between the capstone student and site mentor about ideas and areas of focus. The stakeholders identified included the individuals living there, clients of Village of Merici, the coaching staff, administrative staff, and donors. Additional stakeholders include Old Town Companies, Lincoln Property Company, and the surrounding community in Carmel due to the partnerships and new build of the North End Apartments. This was important for the implementation of the capstone project, as well as the development. The second interview occurred on site with the Director of Services to identify the most important need. The capstone student asked questions regarding the office setting, the typical day, future employment opportunities, needs among the clients of Village of Merici, those who would benefit from the project, and questions regarding technology supports and how they could be incorporated.

Results

The typical day for the staff at Village of Merici is nine to five, and there are about 10 office employees and only the executive director is an occupational therapist. The staff identified that clients need more help with supportive technology and how to use it to be less reliant and dependent on others. Staff stated that clients, families, and coaches would benefit from implementing technology into their daily routine. Regarding specific technology, the director purchased Amazon Alexa devices for the capstone student to experiment with to create an informative program to educate clients and staff on the full use of the device. The devices purchased included the Amazon Echo Show 10, Amazon Echo, Echo Dot, Echo Show 15, and smart plugs. Outside of Amazon, another system purchased was the Grand Care System. The Grand Care System is a more medically based form of assistive technology used for remote-monitoring services. The director indicated that information needed to be gathered about these devices' functions, skills, and accessibility features to see which would be the best fit for clients of Village of Merici services, specifically those living at the 40 apartments in Carmel.

When the capstone student arrived on site, the staff described barriers concerning technology. These barriers included lack of awareness of modern technology supports, lack of knowledge on how to use smart devices and accommodate them to client's specific needs and skills levels, and limited amount of time to educate and set up devices. Clients of Village of Merici expressed a high level of interest in technology, and some already use smart phones and Amazon devices in their daily life. Researching modern technology and the devices skills to increase independence among individuals with I/DD would be extremely beneficial.

Overview of the Problem

Technology is continually advancing with the next latest and greatest product. The use of technology, whether that be a smart phone or a smart device within a home, can allow one to engage in more preferred occupations and improve overall independence. These devices improve time-management skills with the use of reminders and calendars, as well as communication skills by using texting, calling, video and camera features. Research and education barriers are present within the Village of Merici staff surrounding the development of technology supports and how to accommodate specific devices to a clients' skillset. Research and education on the most up to date smart devices and their skills should be prioritized to facilitate independence and promote engagement in meaningful occupations for those with I/DD living alone.

Literature Review

A literature review was conducted to explore the most current research regarding assistive technology and the use among the population of individuals with intellectual and developmental disabilities. This information determined the gap and aided in the development and implementation of this specific capstone project regarding technology supports. The articles were chosen using a systematic approach to discover the best articles relating to assistive technology among individuals with intellectual and developmental disabilities. Two databases were used, including CINAHL Complete, as well as PubMed. The primary search terms that were used were: technology, assistive technology, intellectual and developmental disabilities, and occupational therapy. To obtain the most current research, the search was limited to articles published within the past 10 years. If articles were found in the past 5 years, they were prioritized to obtain most recent information. Articles were reviewed and then included in this paper based on relevance to the project's focus, purpose, and goals.

Support of Technology for Individuals with Disabilities

The positive impact that technology has on adults with intellectual and developmental disabilities (I/DD) continues to be researched and supported. Grajo and Boisselle (2018) recommend the use of technology to their clients to enable overall occupational performance and improve quality of life. O’Brolchain (2018) provided a need for technology among those with I/DD and states, “technological aids are therefore of immense importance as they bring people up to a certain threshold, whereby they will be better able to communicate, interact, or be a part of their society” (p. 2). With assistive technologies, personal autonomy of those with I/DD may be improved, as well as overall health and well-being.

Improved Health and Well-Being

Carmeli and Imam (2014) indicated a need for effective and efficient health promotion and disease prevention strategies within the population of individuals with intellectual and developmental disabilities. One strategy includes using assistive technology as an intervention to increase one’s independence. These forms of assistive technology could consist of tele-health, alerts, alarms, security systems, technology helping with personal hygiene, shopping, telephone use, travel in community, meal preparation, and housekeeping. These types of assistive technology would help those with I/DD complete activities of daily living, allow them to participate in more learning opportunities, and decrease their dependence on caregivers (Carmeli & Imam, 2014). Smith et al. (2020) explained the importance of individuals with I/DD having the ability to use smart-speaker technology. These assistive technologies, such as Amazon Echo and Google Home, allow vulnerable groups across health and social care the opportunity to enhance agency and well-being. Söderström et al. (2019) indicated the purpose of assistive technology (AT) is to “compensate for the gap between a person’s functional capacity and the

functional demands of his or her environment by facilitating everyday living and participation in daily activities” (p. 3). Those with I/DD increased participation, exercised greater control, and gained health-related benefits when using AT (Söderström et al., 2019).

Specific Outcomes of Technology Use

Damianidou et al. (2018) found that technology could help adults with intellectual and developmental disabilities achieve employment-related outcomes. It identified that the use of technology could teach self-determination skills regarding employment. The use of a smart watch to vibrate at the appropriate time and act as a visual prompt to let someone know when to transition was important for functioning. This helped improve time management skills among those with I/DD. Damianidou et al. (2018) explained the definition for Applied Cognitive Technology, which means, “technology supports that enable people with cognitive disabilities to successfully function in inclusive environments, to increase participation in tasks and activities in inclusive environments, and to promote social inclusion, self-determination, and quality of life.” Not only does this include traditional assistive technology, but also computer technology, and electronic and information technology (Damianidou et al., 2018).

Tasse et al. (2020) reported the outcomes of using technology as a form of remote monitoring service due to the lack of staff and direct support professionals (DSP) for those with I/DD. Remote supports in an individual’s home consisted of home-based sensors, automated medication dispensers, and video cameras. These sensors were able to alert a staff on duty and indicate if an on-call DSP needed to go on site for assistance or if a caregiver needed to be notified if a response could not be given over video. Individuals using these services reported safety to be the number one benefit and having increased independence as second, and claimed to enjoy interacting with remote support staff.

Role of Occupational Therapy in Technology

Occupational therapy's (OT) role in technology focused on health promotion and prevention strategies within the literature. Depending on client's needs and abilities, OT could help determine the right piece of technology. Occupational therapists can help educate and support individuals in using the technology in everyday life, whether that be for employment, communication, social participation, ADLs, and IADLs (Carmeli & Imam, 2014). Lancioni et al. (2017) supported the use of smartphones to help those with I/DD perform daily activities with reminders and instructions. With this information, occupational therapists can help educate one on smart phones and help set up reminders for appropriate times within therapy sessions. In addition, Boot et al. (2017) found that with accurate assessment and appropriate intervention, assistive products can be enabling, empowering, and create new life skills and opportunities for those with I/DD. These products can overall help promote aging in place. Occupational therapists can identify an accurate assessment tool to determine the needs of the individual, and then create an intervention plan using the technology supports to produce the best outcome. OT practitioner's unique perspective and understanding of occupational needs, coupled with activity analysis skills, firmly support the use of various types of AT (AOTA, 2015).

Barriers to Technology

The positives of implementing technology and smart devices into an individual's everyday life far exceed the negatives. At the Village of Merici the need for implementing assistive technology into one's daily life is to help them be less dependent on a physical being. With assistive technologies and any form of technology at that, personal autonomy of those with I/DD will improve, therefore improving overall quality of life. More research would be helpful to identify what forms of assistive technology would be best for individuals with I/DD due to the

continued advancements. Research recommends that assistive technology be introduced as early as possible to individuals with I/DD to have the best benefits (Carmel & Imam, 2014). There is also a need for support staff and caregivers/families to receive more training and support to get the most out of the smart devices (Smith et al., 2020). New forms of technology require time, education, and the willingness to learn about the benefits and potentials of each device.

Best Practices

Sandjojo et al. (2019) found that most people with intellectual disabilities have difficulty managing affairs independently, which is why having the resources available for education on topics and allowing experience with forms of technology is very important. Individuals with intellectual disabilities face difficulty with personal care, household activities, community participation, and employment (Sandjojo et al., 2019). With technology supports, these activities would be easier to achieve and allow individuals to have more resources and the opportunity to engage in the community more independently. Since independence is highly valued among this population being able to complete these activities will most likely increase feelings of happiness, satisfaction, and improve quality of life. The best benefits come from individuals with I/DD adopting technology early (Carmel & Imam, 2014). It is best practice to promote independence for this population and develop learning opportunities (Sandjojo et al., 2019).

Gap Analysis

The Village of Merici presented with a need of finding what form of technology support would benefit individuals with I/DD based on their needs and abilities within their living environment. There was also a need for more research on the importance of this topic and a possible grant source to supply the purchase of necessary smart devices and technology supports that fall outside of budget. With the use of a technology assessment tool, support staff will be

able to identify what devices and technology would promote healthy living and encourage less dependence on a physical being. There continues to be a need for education on smart devices for not only the individual but support staff. Resources and information on each device and technology support needs to be completed to take advantage of the whole device and its features. The purpose of this project was to identify technology supports with the help of research and technology assessments to improve independence among those with I/DD.

Guiding Theory and Model

For this capstone project, the Occupational Adaptation Model was primarily used due to its considerations of the person's environments and bodily functions. This model "emphasizes the creation of a therapeutic climate, the use of occupational activity, and the importance of relative mastery" (Schkade & Schultz, 1992). This practice model is holistic and states that the patient's occupational environments are just as important as the patient's sensorimotor, cognitive, and psychosocial functioning. It is directed to improve the patient's occupational adaptation process, which the person uses when facing occupational challenges. The purpose of this model is to identify and treat impairment or interference in the patient's occupational adaptation process. The intended outcome when using this model is to increase occupational performance and teach adaptive techniques for the challenges they face in their environment (Schultz, 2014).

Individuals with intellectual and developmental disabilities would benefit from this model to help them adapt to challenges they face when living alone. With the proper education and teaching method, individuals with I/DD will use the technology in the environment of their own living space to overcome challenges they might encounter. When one can adapt with sufficient mastery, in this case with the use of technology, the individual has shown success in

occupational performance (Schultz, 2014). Achieving mastery of the technology and having the knowledge of when to use a specific device allows individuals with I/DD to have more confidence, self-determination, and less dependence on a physical being.

Project Plan and Process

The capstone student's plan consisted of understanding the use of available technology, including the Amazon Alexa devices, attending the American Technology Industry Association (ATIA) conference, creating informational sheets for staff of Village of Merici and residents of the North End Apartments, and arranging an educational session to discuss the benefits of smart technologies before beginning technology assessments. The capstone student gained resources and knowledge from the conference to present to those at Village of Merici. The capstone student planned to complete the assessments after identifying resources for specific needs and skill levels. The capstone student reviewed the project plan with the site mentor before creating educational handouts and discussed what clients to assess first. Throughout the process of this project, the capstone student updated goals and objectives to reflect the needs of the site (see Table 1).

Weeks One Through Three

The site mentor informed the capstone student in the first two weeks about the development of technology resources and supports at Village of Merici. The site mentor introduced the capstone student to the Echo Show 10, the Echo Show 15, and the Echo Show 8. In this time, the capstone student visited a program called LADD in Cincinnati, which had created a complete smart home for four individuals with disabilities. The capstone student developed a stronger understanding for smart technologies and how they could integrate into an individual's life to promote independence. During week two, the capstone student met with

additional stakeholders, including North End's partners, Old Town Companies and Lincoln Property Company. The capstone student made changes to the needs assessment and researched additional smart technologies, specifically the Echo Show 10. By week three, Old Town Companies made the decision to purchase an Amazon device for the 40 apartments in the North End community to facilitate the use of technology to increase independence. The capstone student located Amazon's accessibility page to identify the compatibility of the Echo Show for those with I/DD before continuing research. This research consisted of firsthand experience setting up the Alexa devices and enabling skills to help those with I/DD depending on their specific needs. The site mentor provided specific diagnoses for the capstone student to study and identify smart technologies for modifications. The capstone student concluded that the Echo Show 10 was compatible and capable of offering assistance to those with I/DD.

Weeks Four Through Six

During week four, the capstone student attended the American Technology Industry Association conference in Orlando, Florida. The capstone student joined sessions at the conference dedicated to smart home devices, modifications, and apps that could help those with disabilities. The capstone student returned from the conference with resources and began researching other devices in addition to the Echo Show. In this time, the free technology assessment tool from the program LADD was emailed to the Village of Merici team for upcoming technology assessments. At the Merici Village Apartments, the capstone student began setting up smart plugs and connecting them to the Echo Show to mimic a smart home environment. During this time, the capstone student planned the program development of technology sessions, and developed an in-service for smart home devices for those living at the Merici Village Apartments and the North End Apartments (see Appendix A). The capstone

student planned to also create a technology resource binder as a visual aid to those living in the apartments (see Appendix B). The capstone student continued to find supporting articles during this time to provide evidence for the positive impact that technology has on those with I/DD. During week six, Old Town Companies provided the capstone student with information regarding the Butterfly Management system that would be access to buildings at the North End Apartments. With this information, the capstone student researched if the system was compatible with the Echo Show device.

Weeks Seven Through Nine

In this part of the experience, the capstone student spent time researching and creating informational handouts on the benefits of smart technologies to include in the technology resource binder. These handouts included information on smart phones, smart watches, the Echo Show 10, skills on the Echo Show, and Alexa command guide, and the benefits of technology for those with I/DD. The capstone student attended an Easterseals Crossroads facility tour to look at their INDATA lab, and learn about the process of accessing their lending library. Additionally, the in-service informational technology session was led during week nine to prepare individuals for upcoming assessments. The capstone student planned to meet with selected residents during the end of week nine to schedule a technology assessment for the following three weeks. The process to schedule was by interacting in person and/or texting the individual. The capstone student notified the site mentor of all scheduled sessions and a calendar reminder was sent to each individual the week of their assessment.

Weeks Ten Through Fourteen

In this period of the project, the capstone student traveled to Lafayette, with partner Old Town Companies to look further into the Butterfly Management system at another property. The

purpose being to confirm the Echo Show 10 device would work with the Butterfly Management Skill. During week eleven and twelve, the capstone student completed technology assessments using the free assessment tool that LADD had provided. The capstone student determined what smart devices would be beneficial to the specific individual based on conversation, observation, and the results from the assessment. In the final week, the capstone student provided an in-service to demonstrate the outcomes of the assessments to receive feedback from staff, coaches, and partners, and also, address the informational technology sheets included in the technology resource guide (see Appendix B).

Implementation

The project implemented throughout the 14-week experience provided the clients and staff at the site with information regarding technology. The capstone student updated plans based on the needs of Village of Merici. The staff and clients of Village of Merici, as well as the partners of the North End apartments participated in the capstone student's technology building program as the student offered informational handouts, an educational session for the residents of Merici Village, and technology assessments with direct support professionals present.

Due to the technology portion of the North End Apartments, a technology survey (see Appendix C), was sent out to the interest list to determine what forms of technology potential residents were already using. Based on this information, the capstone student determined what kind of education and training potential residents would require after moving into their apartment, following their initial technology assessment. The capstone student completed research on smart home technologies based on the results and created a simple smart home guide, located in the technology binder.

In week 9, the capstone student led a technology session on smart home devices to introduce residents at Merici Village Apartments to the thought of smart home technology before implementing technology assessments. During week 11, the capstone student completed technology assessments using the LADD assessment form. The capstone student assessed clients in their apartments with the direct support professional present for additional input. These questions assessed the individual's independence level during activities of daily living and their ability to make decisions. Each individual participated in the one and a half hour long assessment. The capstone student educated individuals on the reason and importance of the assessment before starting. At the end of each assessment, the capstone student recommended technologies right away based on conversation and results. These recommendations and reports were printed to put in each individual's file. With the recommendations, the capstone student located specific devices and collected them on a word document to show the individual and office staff.

During week 14, the capstone student provided the in-service and educational material on the need for technology for those with I/DD. The capstone student shared the resources and with the executive director prior to the final presentation. The capstone student presented the research and compiled a list of resources the site could use when determining the best form of technology. The capstone student educated the staff on the importance of implementing technology into one's daily life to help increase independence, and decrease dependence on a physical person. During this in-service, the capstone student provided the individual's team leader with the results and recommendations of the assessment to confirm the need for smart technology.

Throughout the experience, the capstone student educated staff, partners, families/caregivers, and individuals on the positive impact technology offers to everyday life.

The capstone student educated the executive director on the Echo Show 10's features and accommodations to those with disabilities. The capstone student also advocated for the use of technology at the North End Apartments, and provided studies to show the impact of smart technologies on adults with I/DD living independently. The research, resources, and assessment tool contributed to the development of a technology role at the site, and the results from the assessment indicated a need for technology.

Evaluation

The site mentor evaluated the capstone student's knowledge of technology and ability to schedule technology assessments with individuals in an appropriate, timely manner by observation. In addition, the site mentor assessed the outcomes received from the technology survey and assessment for the program. The capstone student demonstrated expertise of technology resources to recommend based on results from both. These results were imperative to the development of this program in order to support sustainability, and to help modify the assessment where needed for future use (DeJuliis & Bednarski, 2020). To evaluate the effectiveness of the technology programming, the capstone student compared the results from the initial technology survey, noted the recommendations given to each individual based on the technology assessment, and asked for feedback at the end of the in-service.

Methods

The capstone student and site mentor determined the technology survey sent out in the beginning was the best way to introduce the topic of technology and gain information about what individuals were already utilizing. The site mentor also mentioned that the results from the technology assessment, including asking for feedback at the end of the in-service would be the best method to evaluate the need for technology at Village of Merici.

The technology survey was sent out to all individuals on the interest list for the North End Apartments, those living at the Merici Village Apartments, and those receiving services through Village of Merici out in the community. Questions targeted the technology individuals already use, what they use it for, how independent and comfortable they are using technology, and if they are willing to learn more about technology. For responses, individuals either chose from multiple choices, multiple answers, wrote short responses, or responded yes or no, which formed the capstone student's qualitative data. This survey was sent out through email with a google form attached, which tracked and time-stamped their responses. The capstone student informed participants that the survey was not required and their information would be protected. After collecting the responses from the survey, they capstone student identified themes within the qualitative responses.

The technology assessment at Merici Village Apartments also acted as a form of evaluation to indicate the effectiveness of the assessment tool and signify a need for the program. The capstone student conducted these assessments with the individual's direct support professional present and noted common themes after receiving results. These qualitative results helped determine the significant need for technology and the reason individuals needed specific devices. The capstone student completed the final presentation in week 14 and feedback was asked from participants regarding if they felt there was a need for technology at Village of Merici, if the assessment tool was effective, and if they would benefit from its capabilities. The capstone student used a QR code for access to the survey and asked questions regarding their understanding, knowledge, and comfort level regarding technology.

Results

For the initial technology survey, 30 individuals responded and fully completed the survey to begin the evaluation of the program. These results initiated the start of the technology portion of the project, because it proved the need for technology. The common theme among survey responses were the lack of smart phones, the lack of smart watches, and the lack of using technology to help with activities of daily living. These survey results emphasized the need to perform a more in-depth assessment using the assessment tool.

The assessment tool was used on nine individuals, one living in the community and the others living at the Merici Village Apartments. From the results, the capstone student organized each individual by team leader and created a chart of the most necessary technology items that would be valuable to the resident. Not all technologies were noted due to their importance and interest of the client. The results of the surveys emphasized the gap for technology in individuals lives. A common theme among the nine individuals revolved around using technology for reminders, alarms, and timers.

The post survey followed the in-service given in week 14. This in-service identified coach's, participant's, and/or administrative team member's comfort level and knowledge of technology supports. The responses were based on a linear scale of one to five. One being the least comfortable, understanding, or knowledgeable, and five being the most knowledgeable and comfortable with technology. Eight responses were received and collected. Seventy-five percent reported an understanding of implementing technology into everyday activities, 75% reported they could advocate for the use of technology, 87.5% reported a better understanding of devices available, 87.5% informed the capstone student that they wanted to stay aware of the newest devices and apps, and 87.5% shared that they would be comfortable teaching and/or learning

about new technologies. Overall, the respondents of the survey reported an increase in importance of integrating technology into everyday life, an increase in advocating for the use of technology, and overall, a better understanding of existing technology. The respondents also indicated the willingness to stay up-to-date on technologies and learn how to use specific devices efficiently. See Table 2 for a breakdown of responses.

Discussion

The doctoral capstone student expected to find one overarching theme among staff members' and individuals final surveys regarding the importance and intent to use technology in the future. The responses to the technology program at Village of Merici were overall positive as participants of the in-service survey indicated their new perspective on the positive impact that technology could provide to those with I/DD. The time commitment for implementing technology into the lives of individuals still presents as a barrier, but with resources and in-services staff have increased their knowledge of what is available and possible. The 14-week experience highlighted the various smart technologies available to those with I/DD and the impact technology can have in promoting independence. The capstone student added technology resources and information sheets to the online files of Village of Merici for easy access in the future.

Limitations and Future Directions

The small portion of residents that participated in the assessment was a limitation of this project. The assessment itself was not the most reliable for this specific setting due to its prior use for four individuals moving into a fully-equipped, newly built smart home. This assessment tool was not built specifically for the site, therefore, there were questions that did not pertain to the individuals. The results from the assessments were shared with the site mentor and team

leaders, and with these results, the site mentor was informed of possible barriers and changes to make for the future assessments at the North End Apartments. Before beginning assessments at North End, it is imperative that a new assessment be created to target the specific community. Sending out an additional survey to the chosen 40 residents after their lease signings will also be important in determining what technology supports they already have and use. An additional limitation was the number of responses to the survey. Due to busy schedules, there were very few coaches present, which would have been beneficial for program results and carryover.

Impact

Technology has the potential to facilitate participation and improve independence among those with I/DD, especially when living alone. An occupational therapist can customize technology to meet the needs of the client and promote aging in place. For adults with I/DD it is imperative that we encourage independence, social participation, and community integration, especially with the use of technology. Technology will be around longer than a physical person, and if one adopts it early, they will be able to see its positive impact. The creation of this technology program will continue to increase client and caregiver knowledge, advocacy skills, and overall comfortability when introducing technology into someone's life. By providing resources, Village of Merici staff will continue to have easy access to technology supports and be able to use it more frequently. By educating stakeholders on the benefits of assistive technology, it was the goal of the capstone student to improve the overall quality of life for those with I/DD and decrease their dependence on a person.

During the capstone experience, the capstone student received great feedback from not only residents, but office staff and coaches. The residents and clients of Village of Merici showed interest in all the possibilities they could try, and how they could use the technology they

already have more frequently. Staff and coaches were surprised at the amount of smart technologies available and even stated their intent to utilize technology more. Overall, the capstone student was able to advocate for the use of technology among this population, increase awareness of technologies available, and encourage individuals and coaches to not be afraid of technology.

Sustainability

The sustainability plan of the doctoral capstone's student technology program was fully supported by the buy-in from key stakeholders, the supplying of educational resources, and the access to smart devices for demonstrations and further research. The Village of Merici staff has indicated a significant need for technology and increased intent to use technology with residents to decrease their reliance on staff. The Village of Merici was recently given a grant specifically for assistive technology, which will allow the technology program to flourish. Also, Village of Merici has listed a job for a technology support specialist to continue this program for not only residents at the North End Apartments, but the individuals supported in the community as well.

Conclusion

The purpose of the capstone project was to integrate technology into the lives of individuals with intellectual and developmental disabilities at the Village of Merici to facilitate social participation and promote independence. Assistive technology allows individuals to enhance their occupational performance and complete activities easily without depending on a physical person. Support staff is difficult to maintain in today's world and utilizing technology as a form of remote support can be helpful to not online service providers like Village of Merici, but families, caregivers, and the individual. After researching different forms of technology supports, the capstone student educated staff members, individuals with I/DD, and families about

the importance of assistive technology. The capstone student completed technology assessments to identify specific needs for technology, whether it was for reminders, using the calendar, alarms, shopping lists, and/or playing music. The capstone student provided the staff at Village of Merici with the findings to show where technology could be implemented and how it would decrease dependence on support staff and families. A survey assessed the effectiveness of the assessments and technology program as a whole after completing the project.

The survey results supported the effectiveness of the capstone experience with very positive feedback. Staff at Village of Merici, those with I/DD, and coaches increased awareness of technology, understood the importance of technology, and reported improved advocacy skills towards the topic of technology. To support sustainability, the capstone student recommends further tracking of the technology programs, additional in-services regarding technology devices, and continued surveys throughout the start of the program in order to gain feedback from staff, individuals, and partners. This capstone project proved the need and importance of technology use for those with I/DD in order to promote independence, therefore improving quality of life.

Table 1

Addressing the Need of Technology for Those with Intellectual and Development Disability

Project Goal	Associated Objectives
<p>1. The student will gain and utilize knowledge gained from ATIA conference to increase technology supports within the community and assist in program development within the 12 weeks.</p>	<p>a. The student will learn about how technology can be implemented into everyday lives to improve independence, community engagement, and quality of life of individuals, and apply to the client at Village of Merici by week 3.</p> <p>b. The student will attend conference education sessions to increase knowledge about specific technology and assistive technology that will be applied to residents at the Village of Merici by week 3.</p>
<p>2. The student will develop a program and identify resources to sustain technology supports program by week 12.</p>	<p>a. The student will gather information about technology already being used by sending out a survey to individuals on the interest list by week 8.</p> <p>b. The student will determine what specific forms of technology would best benefit each individual with the use of an assessment form by week 10.</p> <p>c. The student will educate staff on site about technology supports that would benefit those with intellectual and developmental disabilities with the help of a technology guide by week 12.</p> <p>d. The student will advocate for the use of technology for this population and identify resources to acquire any needed technology supports needed within the community by week 12.</p>

Table 2*Survey Responses to Linear Scale Questions*

Question	Min (# of respondents)	Max (# of respondents)	Mean
1. Do you understand the importance of incorporating technology into an individual's every day life?	4.00 (2)	5.00 (6)	4.75
2. Could you advocate for the use of technology for individuals with I/DD?	4.00 (2)	5.00 (6)	4.75
3. Do you think you have a better understanding of what smart devices are available?	3.00 (1)	5.00 (7)	4.75
4. Do you want to stay up-to-date about technology, such as newest devices and apps?	4.00 (1)	5.00 (7)	4.875
5. Would you be comfortable teaching and/or learning about new technologies to use?	3.00 (1)	5.00 (7)	4.75

Note: Responses recorded on linear scale (1= no to 5= yes).

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Appendix A

Introduction to Technology PowerPoint Presentation



- Smart Toothbrush
- Sensor Mirror HI-Fi
- Echo Dot/Kohler Moxie
- Hands-Free Soap Dispenser
- Toothpaste Dispenser
- Medicine Dispenser
- Motion Sensor Toilet Light
- Rechargeable Cleansing Brush
- Smart Scale

Kohler Moxie

- Amazon Alexa-enabled so you can ask to play music, hear the news, check weather, control smart home devices, and more



- Sleep Tracker
- Automatic Blinds
- Smart Alarm Clock (Echo Dot)
- Smart TV
- Bluetooth Outlets/Smart Plugs
- Smart Lighting
- Smart Motion Sensors
- Wi-Fi Aromatherapy Diffuser
- Smart Fan



Sleep Tracker by Beautyrest



MISCELLANEOUS TECHNOLOGY

- Smarter FridgeCam Wireless Camera for Inside Any Refrigerator – takes a picture every time you shut your fridge - \$130
- Tile Mate – key finder, item locator - \$20
- Digital Coin Counter - \$18
- Smart Blood Pressure Cuff (Omron Gold) – compatible with Alexa - \$73



ANY OTHER FORMS OF TECHNOLOGY?



THANKS!



Do you have any questions?

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Appendix B
Technology Guide





WHY *Smart* TECHNOLOGY



Advancements

- Technology is always evolving
- Crucial to become an early adopter
- Integrated within many aspects of daily life - transportation, employment, recreation, and social interaction

Benefits

- Empowers individuals to do more and facilitates everyday living and participation (Soderstrom et al., 2019)
- Enhances agency, self-determination, and well-being (Smith et al., 2020)
- Achieves employment-related outcomes (Damianidou et al., 2018)
- Decreases dependence on caregivers and staff (Carmeli & Imam, 2014)

Research



Damianidou et al., 2018



Carmeli & Imam, 2014



Smith et al., 2020



Soderstrom et al., 2019



How to Make Your Apartment a Smart Home



Amazon Alexa Echo Show 10



- Can add apps (skills) of your preference and needs
- Acts as the Smart Home Hub for all smart devices
- Can control from smart phone



Smart Plugs

What is a smart plug?

- A smart plug installs between the plug of an appliance and an existing outlet, throttling the power on and off to the device.





Smart Plug Brands and Names:

- [Amazon Smart Plug](#)
- [Govee Dual Smart Plug](#)
- [Kasa Smart Home Smart Plug](#)
- [Wyze Smart Plug](#)



Smart Lighting

Bulbs:

- [Philips Hue Smart Button Starter Kit](#)
- [Nanoleaf Lights Panel Starter Kit](#)
- [Sengled Zigbee Smart Light Bulbs](#)
- [Lumiman Smart Light Bulbs Motion](#)



Sensor Lights:

- [AUVON Plug-In LED Motion Sensor Night Light](#)

Water Leak Detectors:



- [Govee WiFi Water Sensor 3-Pack](#)
- [YoLink Smart Home Starter Kit](#)



Govee Water Sensor

Cleaning Devices:



- [iRobot Braava Jet – Robot Mop](#)
- [iRobot Roomba Vacuum](#)



Smoke and Carbon Monoxide Detector

- [Ring Alarm Smoke and CO Listener](#)
(requires ring alarm system)
- [Ecoey WiFi Smoke Detector and Alarm](#)



Smart Blind Options

Smart Blinds

- [Astomi Motorized Smart Blinds](#)
- [MANSNIX Smart Blinds](#) (require smart bridge)
- [SmartWings Smart Blinds](#)
- [SOMA Smart Shades 2](#)

Smart Motion Sensors:

- [YoLink Speakerhub and Sensors Kit](#)
- [THIRDREALITY Zigbee Contact Sensor](#)
- [Govee Door and Window Sensor](#)



SMART WATCH



→ TOUCH-SCREEN ENABLED WRISTWATCH THAT CAN BE CONNECTED TO A PHONE THROUGH BLUETOOTH OR WIFI

FEATURES



The pros of a smart phone



Phones are small and convenient, so they're easy to carry anywhere.



It's easy to make and receive calls on a phone without needing to use third-party apps.



Smart phones are the best choice for communicating since you have the choice of calling, texting, and using a wide variety of messaging apps.



Smart phones can be utilized for arranging an Uber ride, taking pictures, setting alarms/reminders, adding things to your calendar, and staying connected.

The pros of the Echo Show 10

WHAT IS IT?

An Alexa-enabled smart device that can control a variety of smart home devices due to its built-in Zigbee hub.



Features

- Screen and Speaker
- Automatically rotates while interacting on video calls, drop-ins, or watching instructional videos
- Acts as a security system
- Perfect for music
- Acts as a smart home control system
- Preferred apps (skills) can be added through Alexa app on smart phone

What is ✦ Alexa Together? ✦

A remote caregiving service for an Alexa-enabled device that helps provide support for your loved ones without physically being there .

Peace of mind for you. Independence for them.

Customized Alerts

- Set up alerts to see when your loved one interacts with Alexa or any smart home device



Remote Assist

- Set reminders on a loved one's Echo, manage shopping lists, link music services, and more



24/7 Urgent Response

- 24/7 hands-free access to trained agents who can help your loved one get assistance



Additional Features:

- Works with compatible third-party fall detection devices: Vayyar, SkyAngelCare, or AltumView
- Multiple people can be included in your loved one's circle of support

★ Cost: \$19.99/month plus tax after 30-day free trial

More Info: [Alexa Together \(amazon.com\)](https://amazon.com/AlexaTogether)

H O W T O I N T E R A C T W I T H A L E X A

A L E X A
C O M M A N D
G U I D E

2 0 2 3

Basic Alexa Commands

Ask for Help: "Alexa, help."

Mute or unmute: "Alexa, mute" or, "Alexa, unmute."

Stop or pause: "Alexa, stop"

Change volume: "Alexa, set the volume to 5," "Alexa, louder" or, "Alexa, turn up/down the volume."

Alexa Commands Specifically for Echo Show

Ask for what the Echo Show can display: "Alexa, what can you show me?"

Show your calendar: "Alexa, show my calendar."

Show pictures: "Alexa, show my photos" or, "Alexa, show me pictures of cats."

View your cameras or other rooms: "Alexa, show the living room camera."

View movie trailers: "Alexa, show me the trailer for Wakanda Forever."

Movie showtimes: "Alexa, show me movie showtimes."

View the forecast: "Alexa, show me the weekend forecast."

Play YouTube videos: "Alexa, show me travel videos on YouTube."

Display recipes: "Alexa, show me a slow cooker recipe from Allrecipes."

View your Flash Briefing: "Alexa, play my video Flash Briefing."

See your timers: "Alexa, show me my timers."

Open a visual skill: "Alexa, open Uber."

Alexa Commands for Fire TV and Fire TV Stick

Control Fire TV: "Alexa, [pause, play, resume, stop, fast-forward, rewind] on Fire TV."

Search movies or TV: "Alexa, search for [movie to TV show title] on Fire TV" or, "Alexa, find [movie or TV show title] on Fire TV."

Find work by a certain actor: "Alexa, show me titles with [actor] on Fire TV."

Open apps: "Alexa, open [app name] on Fire TV" or, "Alexa, launch [app name] on Fire TV."

Return home: "Alexa, return home."

Alexa Commands to Control Media (music)

Adjust audio settings: "Alexa, set the bass to four."

Play music: "Alexa, play some music."

Play music on other (or multiple) Alexa devices: "Alexa, play [artist/album/song/genre] in the living room" or, "Alexa, play [music] everywhere."

Cue specific song or artist: "Alexa, play music by [artist]."

Play a song based on context: "Alexa, play the latest Avett Brothers album" or, "Alexa, play that song that goes 'Gotta gotta be down, because I want it all.'"

Play music based on a theme: "Alexa, play baby-making music" or, "Alexa, play rock music for working."

Play the song of the day: "Alexa, play the song of the day."

Play Spotify music: "Alexa, play [playlist] on Spotify."

Play Pandora station: "Alexa, play [artist] station on Pandora."

Play a radio station: "Alexa, play [radio station call letters, example: WEBN]."

Play an audiobook: "Alexa, play [title] on Audible," "Alexa, read [title]" or, "Alexa, play the book, [title]."

Resume the last played audiobook: "Alexa, resume my book."

Skip audiobook chapters: "Alexa, next chapter" or, "Alexa, previous chapter."

Play a bedtime story: "Alexa, open Storytime."

Listen to Alexa read you a Kindle book: "Alexa, read my Kindle book."

Set a sleep timer: "Alexa set a sleep timer for 45 minutes" or, "Alexa, stop playing in 45 minutes."

Song information: "Alexa, what's playing?"

Music controls: "Alexa, play" or, "Alexa, next."

Control music playback on another Alexa speaker: "Alexa, stop in the kitchen" or, "Alexa, next in the office."

Restart song: "Alexa, restart."

Add a song to your Prime Music library: "Alexa, add this song."

Create a playlist in Amazon Music: "Alexa, create a new playlist," or, "Alexa, create a 'Friday Chill' playlist."

Add a song to a playlist in Amazon Music: "Alexa, add this song to my playlist," or, "Alexa, add this to my [playlist name] playlist."

Like or dislike a song on Pandora and iHeartRadio: "Alexa, I like this song" or, "Alexa, thumbs down."

Start Amazon Music Unlimited trial: "Alexa, start my free trial of Amazon Music Unlimited."

"Alexa, wake me up every day at 8 a.m. to music" allows users to set their mornings off right with music from Pandora, Spotify, TuneIn, iHeartRadio and Vevo.

Alexa Commands to Control Time and Dates

Set an alarm: "Alexa, set an alarm for 7 a.m." or, "Alexa, wake me up at 7 in the morning."

Set a music alarm: "Alexa, wake me up to [artist, song, genre, playlist or album] at 8 a.m.," "Alexa, set an alarm to Band of Horses" or, "Alexa, wake me up to Kiss FM on TuneIn."

Set a repeating alarm: "Alexa, set a repeating alarm for weekdays at 7 a.m."

Set a timer: "Alexa, timer" or, "Alexa, set a timer for 15 minutes."

Set a music timer: "Alexa, set a 15-minute timer to My Heart will Go On"

Create a named timer: "Alexa, set a pizza timer for 20 minutes."

Set multiple timers: "Alexa, set a second timer for 5 minutes."

Check timer status: "Alexa, how much time is left on the pizza timer?" or, "Alexa, what are my timers?"

Cancel a timer: "Alexa, cancel the pizza timer" or, "Alexa, cancel the 15-minute timer."

Ask the time: "Alexa, what time is it?"

Ask the date: "Alexa, what's the date?"

Ask when the next alarm is: "Alexa, when's my next alarm?"

Cancel an alarm: "Alexa, cancel my alarm for 2 p.m."

Snooze alarm: "Alexa, snooze."

Check dates: "Alexa, when is [holiday] this year?"

Alexa Commands for Calls and Messaging

You can make calls and leave voicemails to other Echo users, as well as "Drop In" to your own echo devices, either to voice or video chat with whoever's in the room (or just to monitor the space like a security camera). If you have an Android, you can send text messages with Alexa.

Call another Echo user: "Alexa, call [name]."

Answer an incoming call: "Alexa, answer the call" or, "Alexa, answer."

Hang up: "Alexa, hang up" or, "Alexa, end the call."

Message another Echo user: "Alexa, message [name]" or, "Alexa, send [name] a message."

Play messages: "Alexa, play messages."

Send an SMS: "Alexa, send an SMS to [contact name]" or, "Alexa, send an SMS."

Use Drop In on one of your own devices: "Alexa, drop in on the living room."

Drop In on another user (requires the other user to allow you to Drop In anytime): "Alexa, drop in on [name]."

Turn off the video during an ongoing call (only works with Echo Show): "Alexa, turn video off."

Make an announcement: "Alexa, announce it's dinner time," "Alexa, broadcast it's time to go" or, "Alexa, tell everyone good night."

Number check: "Alexa, open phone number check" → "tell me about 301-555-5555" or "please provide information about 301-555-5555."

Alexa Commands for Purchasing

Reorder essentials from Amazon: "Alexa, buy more deodorant" or, "Alexa, reorder deodorant."

Track packages from Amazon: "Alexa, where's my stuff?" or, "Alexa, track my order."

Order an Amazon Alexa device: "Alexa, order an Echo," "Alexa, order an Echo Dot" or, "Alexa, order an Amazon Tap."

Add an item to your cart: "Alexa, add garbage bags to my cart."

Order an Uber or Lyft with their skills: "Alexa, ask Uber to request a ride" or, "Alexa, ask Lyft for a ride."

While listening to music in Amazon Music: "Alexa, buy this song" or, "Alexa, buy this album."

Find new music to purchase: "Alexa, shop for new music by [artist]."

Purchase a song or album from an artist: "Alexa, buy [song or album] by [artist]." **Ask about deals:** "Alexa, what are your deals?"

For good recommendations on products, Alexa has you covered. Just say "Alexa, find me a good smartphone on Amazon," and it will find products based on Amazon customer ratings and reviews.

Alexa Commands to Control Notifications

To turn on notifications, open the Alexa app and select to Settings, then Notifications, then Shopping Notifications and toggle it on. Your Echo speakers will light up yellow when you have new notifications.

Check missed notifications: "Alexa, what did I miss?" "Alexa, read my notifications" or, "Alexa, what are my notifications?"

Navigate through notifications: "Alexa, next" or, "Alexa, previous." **Delete notifications:**

"Alexa, delete all of my notifications."

Alexa Commands for To-Do and Shopping Lists

Add task to to-do list: "Alexa, add 'go to the grocery store' to my to-do list" or, "Alexa, I need to make an appointment with the doctor."

Create a new to-do item: "Alexa, create a to-do."

Check calendar events: "Alexa, what's on my calendar for tomorrow?"

Add an event to a calendar: "Alexa, add [event] to my calendar for [day] at [time]" or, "Alexa, add an event to my calendar."

Move a calendar event: "Alexa, move my meeting from 12 to 3."

Create a shopping list: "Alexa, add eggs to my shopping list" or, "Alexa, I need to buy laundry detergent."

Check your shopping list: "Alexa, what's on my shopping list?"

Create a reminder: "Alexa, reminder" or, "Alexa, remind me to check the oven in 5 minutes."

Check on existing reminders: "Alexa, what are my reminders this weekend?" or, "Alexa, what reminders do I have tomorrow?"

Donate money to your favorite charity by saying "Alexa, make a donation to American Cancer Institute Inc." or any number of approved charities.

Want to check your American Express balance? Just say "Alexa, open Amex," and look at your account.

Alexa Commands for News and Weather

Ask for your Flash Briefing: "Alexa, what's my Flash Briefing?"

Add music news to your Flash Briefing: "Alexa, enable Today in Music."

Check headlines: "Alexa, what's in the news?"

Check weather: "Alexa, what's the weather like?" **or,** "Alexa, will it rain today?" You can also ask "Alexa, will I need an umbrella today?"

Get a weather forecast: "Alexa, what's the weather going to be like this weekend?"

Get traffic information: "Alexa, what's my commute look like?" or, "Alexa, what's traffic like?"

Entertainment-related Alexa Commands

Find movies in nearby theaters: "Alexa, what movies are playing?" or, "Alexa, what action movies are playing tonight?"

Get information on movies playing: "Alexa, tell me about the movie [title]."

Get movie quotes: "Give me a [movie] quote."

Get IMDb rating: "Alexa, what is the IMDb rating for [movie or TV show]?"

Get casting for a movie or show: "Alexa, who plays in [movie or TV show]?"

Find out who an actor is: "Alexa, who plays [character] in [movie or TV show]?"

Find an actor's latest work: "Alexa, what is [actor]'s latest movie?"

Find out who sings a particular song: "Who sings the song [title]?"

Get the names of band members: "Who is in the band [name]?"

Get album information: "What year did [band] release [song or album]?"

Find popular music from an artist: "Alexa, what's popular from [artist]?"

Sample music from an artist: "Alexa, sample songs by [artist]."

Find a particular album or song: "Alexa, find [song or album] by [artist]."

Alexa Commands for Food and Businesses

Get a recipe: "Alexa, how do you make chocolate chip cookies?"

Discover nearby restaurants: "Alexa, find me a nearby pizza restaurant" or, "Alexa, what's the nearest coffee shop?"

Get operating hours or a phone number for local businesses: "Alexa, find the address for Bank of America" or, "Alexa, find business hours for Harris Teeter."

Saying "Alexa, open Wine Finder" lets Alexa help you match the best vino with your meal. If you tell Alexa you're eating shrimp, it will tell you the best wine.

Alexa Commands for Help with Math

Convert units: "Alexa, how many [units] are in [units]?"

Convert units: "Alexa, how many [units] are in 2 [units]?"

Basic math: "Alexa, what's 5 plus 7?" or, "Alexa, what's 56 times 33?"

Advanced math: "Alexa, 70 factorial." (Warning: Alexa will list numbers you didn't know existed for about a minute.)

Alexa Commands That Can Settle a Score

Roll a die: "Alexa, roll a die" or, "Alexa, roll a 26-sided die."

Flip a coin: "Alexa, flip a coin."

Pick a number: "Alexa, pick a number between 1 and 50."

Alexa Commands for Help with Definitions and Spelling

Get the definition of a word: "Alexa, what's the definition of [word]?" **Get the spelling of a word:** "Alexa, how do you spell [word]?"

Sports-related Alexa Commands

Check the results of a finished game: "Alexa, what was the score of the [team] game?"

Ask if a team won: "Alexa, did the [team] win?"

Ask when the next game is scheduled: "Alexa, when do the [team] play next?"

Find out the results of your favorite teams: "Alexa, give me my Sports Update."

Get Fantasy Football update with the Yahoo Fantasy Football skill: "Alexa, ask Yahoo Fantasy Football for a score update" or, "Alexa, ask Yahoo Fantasy Football if Patrick Mahomes is playing this week."

Get league standings: "Alexa, what are the MLB standings?"

Alexa Commands for Your Smart Home

Alexa can integrate with loads of smart home platforms, such as SmartThings, Philips Hue, Wink, Insteon, Lutron, Belkin WeMo and many more. Some require you to enable skills, and some don't.

Turn lights on or off: "Alexa, turn on the lights" or, "Alexa, turn off the living room lights."

Dim the lights: "Alexa, dim the lights to 50%."

Change the color of the lights: "Alexa, make the living room lights red" or, "Alexa, turn the lights to soft white."

Change the color temperature of the lights: "Alexa, make the kitchen lights a little warmer."

Adjust temperature: "Alexa, raise the temperature 1 degree."

Set temperature: "Alexa, set the temperature to 72."

Lock your doors: "Alexa, lock my back door."

Close your garage door: "Alexa, ask Garageio to close my garage."

Discover smart home devices: "Alexa, discover my devices."

Use IFTTT recipes: "Alexa, trigger [IFTTT recipe]."

Activate a scene (limited to Control4, Insteon, Lutron Caséta Wireless, Philips Hue, SmartThings and Wink): "Alexa, turn on Movie Time" or, "Alexa, turn on Bedtime."

Control GE appliances with the Geneva skill: "Alexa, tell Geneva to preheat my oven to 400 degrees" or, "Alexa, ask Geneva if my laundry is dry."

Locate a lost phone with the TrackR Lost My Phone skill: "Alexa, ask TrackR to find my phone."

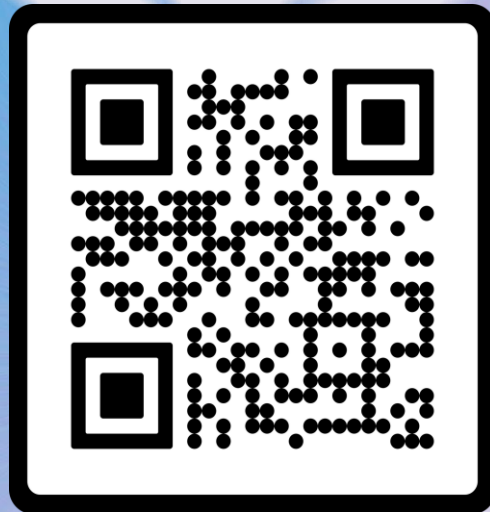
Control the TV via Harmony hub: "Alexa, turn on the TV" or, "Alexa, turn on Netflix."

The Polk Command Bar has Alexa embedded in its soundbar that provides great sound quality.

Saying "Alexa, run Away Mode" produces conversations to scare off any potential burglars.

Alexa Guard can help keep your home safe by alerting you when it picks up the sounds of smoke alarms or breaking glass. It works with the Amazon smart door bell, a Ring and an ADT security system. To set this feature, simply say "Alexa, I'm leaving."

Butterfly MX



Embrace2 seizure monitoringwatch

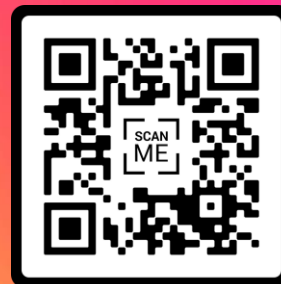
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Appendix C

Technology Pre-Survey Questions

Question	Response Type
1. What technology do you currently have and use?	Multiple Choice
2. What type of phone and/or smart watch do you have?	Short Answer
3. What is your preferred form of communication?	Multiple Choice
4. Do you need help communicating via text, email or call?	Yes or No
5. Do you use any social media platforms?	Multiple Answer
6. Do you have any smart devices in your home currently that you use?	Multiple Answer
7. Where do you use smart technology within your home, if you do?	Multiple Answer
8. If you use technology (smartphone, smart watch, echo show dot, etc.) what do you use it for?	Multiple Answer
9. How confident are you using technology by yourself?	Multiple Choice
10. How comfortable are using technology by yourself?	Multiple Choice
11. Would you be willing to learn more about supportive technology and how to use it in your environment to be more independent?	Yes or No

Note. Responses were recorded on a google sheet.