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Youth in Agriculture: An Occupational Therapy Perspective

Kelsey R. Badger

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Under the direction of the faculty capstone advisor:

Dr. Jennifer Fogo, PhD, OTR

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By

Kelsey R. Badger

Occupational Therapy Doctoral Student

Approved by:

Faculty Capstone Advisor	**Date**
Doctoral Capstone Coordinator	**Date**

Accepted on this date by the Chair of the School of Occupational Therapy:

Chair, School of Occupational Therapy	**Date**

Abstract

There is a growing number of youths living and working on farms with an increasing number of injuries and deaths resulting in a need to educate youth on safety and disabilities. The purpose of the project was to provide education and resources to agriculture students in hopes to increase awareness, accessibility, and life satisfaction of youth. Through independent research and qualitative interviews, a need was discovered to increase disability awareness and social/community participation for youths, with and without disabilities interested/active in agriculture. A disability awareness presentation was developed and given to approximately 239 students and four educators. As an additional effort taken by the student to increase meaningful interactions between youth, with and without disabilities, as a means of disability awareness, four youth attended the 2019 AgrAbility National Training Workshop where they participated in a youth dinner. This youth dinner was a way for the AgrAbility project to expand resources to the population. Advocating for the youth allowed the National AgrAbility Project to expand services to youth and address occupational justice for this population. This provided the youth with resources that could be utilized to increase independence in various occupations and increase quality of life.

Youth in Agriculture: An Occupational Therapy Perspective

In 2017, there were approximately two million farms in the United States (United States Department of Agriculture [USDA], 2018). More than half of the 893,000 youth that lived on a farm worked for that farm (National Children's Center for Rural and Agricultural Health Safety, 2017). Farming/ranching/related agriculture careers are occupations that are one of the most hazardous in the United States and has a disability prevalence of 12.9% (Bureau of Labor Statistics, 2018; Miller & Aherin). In 2014, there were approximately 7,469 youth injured on the farm who resided on the land, and there was a 4.9% disability rate for youth on a farm (Miller &Aherin, 2018; National Children's Center for Rural and Agriculture Health Safety, 2017). These disabilities that occur on or off the farm may decrease quality of life and independence in their daily routine (Miller & Aherin, 2018).

The National AgrAbility Project (NAP) is a national organization whose mission is to increase quality of life for agricultural workers with disabilities through educational opportunities, networking events, online/print resources, funding opportunities, and consultations (AgrAbility, 2019a). The NAP is located at Purdue University along with the Indiana AgrAbility Project (AgrAbility, 2019a). There are 20 State/Regional AgrAbility Projects (SRAP) underneath the NAP (AgrAbility, 2019a). These services are provided to a variety of populations; however, the organization is in the process of expanding to the youth population (AgrAbility, 2019b). The NAP's goal for the youth population is to increase disability awareness by providing resources and implementing programs to facilitate participation in agriculture-based activities (AgrAbility, 2019b). Additionally, the program provides education and encouragement for community projects, 4-H and Future Farmers of America (FFA), to assist

youth with disabilities with community participation and increase quality of life (AgrAbility, 2019b).

The NAP has disability awareness resources and curriculums that promote adaptations to the environment to increase community participation in agriculturally based projects (AgrAbility, 2019b). An example is, the Indiana AgrAbility Project developed the Bridging Horizon's challenge, which serves as a contest for the youth to complete projects within their community to increase independence of a person or people with disabilities (Indiana AgrAbility, 2012). An organization that supports this challenge through the Indiana AgrAbility Project is FFA, an extracurricular program for any youth in school, grades 7th to 12th that provides agricultural education (FFA, 2018). The goal of this program is to increase the life skills in leadership, personal growth, and create a successful career path (FFA, 2018). This program is led by young adults that could adapt the environment and activities to make participation more accessible for youth with disabilities interested in agriculture.

Literature Review

The purpose of this literature review was to explore disability awareness and interventions that increase community participation of individuals with disabilities. The literature will guide the implementation of an advocacy project, by an occupational therapy (OT) student, through the AgrAbility project for youth and adolescents.

Barriers for Participation

Youth with disabilities participate less frequently in community activities when compared to youth without disabilities (Bedell et al., 2013). Barriers that may inhibit community participation amongst youth with disabilities are activity demands, environment, and limited resources (availability of programs, equipment, supplies) (Bedell et al., 2013).

Anaby et al. (2014) researched the factors affecting participation across home, school, and community settings, as well as, how the settings relate to one another. The participants within this study were parents of typical and non-typical developing youth aged 5-17 years old (Anaby et al., 2014). Within the home setting, higher income was related to fewer obstacles whereas the health conditions and functional issues were related to increased barriers that affected the frequency and involvement of youths' participation (Anaby et al., 2014). Within the school setting, health conditions and functional issues were the main barriers of participation (Anaby et al., 2014). The environment is a mediating role between the child's factors and their participation (Anaby et al., 2014). Environmental factors were a direct barrier among participants in all settings while the supports were limited to the home and community setting. The common barriers within the community setting were the activity demands (cognitive, physical, social) and the supports included availability of resources (programs, services, information) (Anaby et al., 2014). The environment served as a mediating factor and supports the need for amending/adapting the environment to increase participation (Anaby et al., 2014). The results of this study support the need for occupational therapists to focus on adapting the environment rather than changing/focusing on the child's impairments. Additionally, it is important to advocate for disability awareness within the community by explaining that the environment can be adapted to fit the needs of an individual with disabilities to increase their participation (American Occupational Therapy Association [AOTA], 2014).

Quality of Contact

A factor that contributes to disability awareness is the quality of contact between individuals with and without disabilities. Disability awareness programs can include education

and peer interaction to improve the knowledge about individuals with disabilities (Spagnolo, Murphy, & Libera, 2008).

Keith, Bennetto, & Rogge (2015) investigated attitudes of typical developing individuals on the impact of quantity verses quality of contact with individuals with intellectual disabilities (IDD). Quantity of contact consisted of passing by an individual with IDD and never spending time with her/him (Keith et al., 2015). Quality of contact consisted of spending time with an individual with IDD through volunteering, working, etc (Keith et al., 2015). Higher levels of quality of contact with individuals with IDD was significantly related to greater positive attitudes for typically developing peers (Keith et al., 2015). The quantity of contact (controlled for quality) was found to be related to higher levels of prejudice (Keith et al., 2015); therefore, creating community-based programs to increase the quality of contact between typical developing individuals and persons with IDD is imperative for improving attitudes.

Spagnolo et al. (2008) examined the effectiveness of using presentations and personal stories to improve adolescents' attitudes toward persons with mental illness. The intervention used modules that focused on personal experiences and research on the topic (Spagnoloa et al., 2008). The modules were presented by a faculty advisor and several consumer presenters with the presentation lasting 60-90 minutes (Spagnoloa et al., 2008). The attitudes of adolescents toward individuals with mental illnesses was affected by the 60-minutes informational session (Spagnoloa et al., 2008). Stigmatized attitudes were reduced through information about mental health and recovery and personal stories of recovery (Spagnoloa et al., 2008). Individuals who viewed the presentation demonstrated decreased stigmatizing attitudes on pity, dangerousness, fear, help, segregation, and avoidance (Spagnoloa et al., 2008). The researchers suggested that high school curriculums should include programs to improve attitudes of the students toward

mental illness (Spagnoloa et al., 2008). The interventions consisted of educating on the facts and myths of mental illness and provide support for the adolescents (Spagnoloa et al., 2008). This is an area of practice where OT practitioners can provide appropriate education on disabilities, educate the youth and adolescents, and promote social interaction between individuals with disabilities and without.

Through a meta-analysis, Talò, Mannarini, & Rochira (2014) found a high association between sense of community and participation within the adult population (immigrants, typical developing individuals, and individuals with disabilities). There were high levels of sense of community when individuals participated in civic forms of engagement (protest activities, public deliberation, campaigning, voting) (Talò et al., 2014). The feeling of being a member in the community and having an emotional connection contributed to the sense of community (Talò et al., 2014). Additionally, the sense of community and participation was established in the adult population rather than the youth population meaning that adolescents develop more peer relationships rather than a sense of community (Talò et al., 2014). However, sense of community can be introduced in hopes to initiate a sense of community, increase interactions, and promote civic forms of engagement (Talò et al., 2014).

Interventions

It is pertinent to view an individual holistically and develop interventions that reduce barriers and strengthen the person's skills. Interventions can be driven by underlying barriers and implemented within a program to fulfill the goal of the project.

Stigma and social experiences across school-aged youth with intellectual disabilities varies across school settings and communities (Carter, Biggs, & Blustein, 2016). However, there are various interventions that can decrease stigma and promote social interaction between youth

with disabilities and without (Carter et al., 2016). Creating a shared experience will allow youth with and without disabilities to engage in the same activities together (Carter et al., 2016). Providing relevant information to the peers may promote confidence with peer interaction and lead to the development of common connections between the peers (Carter et al., 2016). Assigning valued roles to everyone participating in the activity provides the opportunity for each person to feel important and a part of the activity (Carter et al., 2016). Balanced support from staff and faculty can facilitate peer interaction and model positive peer relationships (Carter et al., 2016). These factors can be incorporated into disability awareness programs to promote positive contact between individuals with and without disabilities and assist in the development of peer relationships.

Carter et al. (2014) examined interventions in schools that target social competence and peer relationships for youth with autism spectrum disorder (ASD). Authors reported that individuals with ASD may benefit from comprehensive interventions which included educating peers, building competence, creating a supporting culture at the school, reconceptualizing the adult roles, and engaging families (Carter et al., 2014). Creating more meaningful opportunities for youth with ASD to develop knowledge, positive attitudes, and peer relationships, will increase their well-being and social competence (Carter et al., 2014). Additionally, adult facilitators, peer networks, and peer interaction to promote social interaction among the youth population can increase the quality of life for youth with ASD (Hochman, Carter, Bottema-Ceutel, Harvey, & Gustafson, 2015). Implementation of the comprehensive approach should be utilized cautiously due to the evidence supporting a specialized population (youth with ASD).

Law, Anaby, Imms, Teplicky, & Turner (2015) researched the effectiveness of an environment-based intervention to improve participation of youth with physical disabilities in

leisure activities. The youth were between the ages of 12 and 18 and completed the Children's Assessment of Participation and Enjoyment (CAPE), the Canadian Occupational Performance Measure (COPM), and the KidScreen-27 (Law et al., 2015). The youth established three leisure goals and worked with occupational therapists for 12 weeks to reach the established goals (Law et al., 2015). The occupational therapist worked with the youth on identifying environmental barriers and supports to their leisure participation (Law et al., 2015). There were multiple environmental barriers for all established goals; however, for the purpose of this study, only one environmental barrier was focused on during treatment in correspondence to the goal (Law et al., 2015). Based on the COPM, the ratings on performance increased during the intervention phase indicating that environment-based interventions effectively promoted participation in leisure activities amongst youth with physical disabilities and the youth self-rated performance improved amongst all goals. The youth were able to identify supports (positive attitudes and accessible transportation/buildings) and barriers (lack of funding sources, resources, programs, and social connections) within the environments which contributed to the success of the interventions (Law et al., 2015). The youth developed critical thinking skills that carried over into their daily routine promoting independence (Law et al., 2015). These findings support the importance of occupational therapists applying environment-based interventions into daily practice to increase leisure participation and quality of life for individuals with disabilities. School and community-based programs can adapt the environment utilizing universal design to increase participation for all individuals.

To increase community participation and quality of life of individuals with disabilities, a program should take into consideration barriers and implement meaningful interactions between peers. The "Youth in Agriculture" presentation will include resources from AgrAbility and FFA

to educate the youth population and encourage peer relationships. It is important for individuals with and without disabilities to develop social relationships and physical health, which are predictors of life satisfaction in the future (Law et al., 2004). The purpose of this doctoral capstone was to provide education and resources to FFA teachers, members, and agriculture students in hopes to increase awareness, accessibility, and life satisfaction of youth with disabilities interested/active in agriculture.

Theoretical Framework

The Project Triangle Model and The Intergroup Contact Theory will be used to guide the process of the DCE.

Project Triangle Model

The Project Triangle Model will guide professional reasoning during the DCE because there are multiple projects the student will complete other than the youth in agriculture. This model guides an individual through various steps to develop a program and allows individuals to research for best evidence and uses theories to develop a purpose (Bonnel & Smith, 2017). The review of evidence was conducted during the literature review to guide the purpose of the DCE. It was important to identify methods and outcomes for the program and recognize the contexts/resources (Bonnel & Smith, 2017). This model will allow the student to stay task oriented and guide the different steps required throughout the DCE while completing multiple advocacy projects.

Intergroup Contact Theory

The Intergroup Contact Theory will be used to guide clinical reasoning through the DCE. This theory is about the positive effects of intergroup contact to reduce prejudice that is driven by four components: equal group status within the situation, common goals, intergroup

cooperation, and the support of authorities, law, or custom (Pettigrew, 1998). The term, equal status, refers to the groups' feelings of expectations and perceptions and that they are equal during a situation (Pettigrew, 1998). Common goals aim to reduce prejudice through an active goal, and intergroup cooperation is focused on the individuals that work together towards the common goal (Pettigrew, 1998). The support of authorities, law, or custom establishes positive supportive contact to reduce prejudice (Pettigrew, 1998). The four key components support optimal contact and must provide "friendship potential", defined as "opportunity that implies close interaction that would make self-disclosure and other friendship-developing mechanisms" (Pettigrew, 1998, p.80).

Through this DCE, a program will be developed that focuses on educating youth in agriculture about various disabilities and the importance of viewing individuals as not disabled but as a person interested in agriculture. The program will promote equal group status by creating common goals for members and educators through participating in peer mentoring, engaging in hands-on-activities, while promoting community engagement. Individuals will engage in intergroup cooperation through peer mentoring activities. The community support will develop following the youth's involvement in community participation.

Screening & Evaluation

Needs Assessment Results

An informal needs assessment was completed with the National AgrAbility staff and various Indiana high school agriculture (ag) educators, which consisted of pure qualitative interviews and independent research on the provided AgrAbility curriculums. Pure qualitative interviews are unstructured interviews that collect data and provides the opportunity to build rapport between the individuals participating (Maxwell & Loomis, 2003). This type of

interview is casual, unstructured, open-ended, and exploratory, which allows the researcher to gather all information regarding the topic, therefore eliminating a narrow focus (Maxwell & Loomis, 2003).

The following information was collected from the unstructured interview and independent research. The NAP had already completed initial research on disability awareness within the youth population and collected data on educational standards required in agriculture classes. The NAP developed an assistive technology curriculum for rural youth, which consisted of videos, presentations, and a guide for agriculture educator (Breaking New Ground Resource Center, 2009). Curriculum topics included work practices in agriculture, assistive technology, and disability awareness (Breaking New Ground Resource Center, 2009). The resources were sent to agriculture educators in 2009 and are now available on the AgrAbility website. Due to the length of time since the materials were sent to agriculture educators, depicts a need to increase awareness of disabilities in the youth population and advocate about the youth curriculum resources. Another resource offered to the youth population through the Indiana AgrAbility Project is the Bridging Horizons Contest. Through unstructured interviews, it was found that there are a declining number of participants in this program, so there is a need to advocate about this opportunity.

Following the unstructured interviews and independent research, there were three needs that were identified from the assessment: the need of disability awareness in the youth population, the need for increased awareness of the Bridging Horizon's Contest, and the need to increase social and community participation for individuals, with and without disabilities interested/active in agriculture. These three needs will be addressed throughout the DCE project. Specifically, the following goals have been established: presentations given to three Jr./Sr. high

schools' agriculture classes regarding disability awareness within agriculture; three youth, with disabilities active in agriculture, reached and attending the 2019 AgrAbility National Training Workshop (NTW); contribute three ideas and/or resources to the AgrAbility youth coordinator to enhance youth involvement in the AgrAbility Project. Refer to Appendix A, figure 1A for the Goal Attainment Scale (GAS), which will be used to measure the outcome of each goal

Occupational Therapy in Agriculture

The AgrAbility program has many rehabilitative therapists that work as consultants (Umeda et al., 2017). An OT practitioner can consult for AgrAbility due to the expansion of the Americans with Disability Act (ADA) at an organization-level (Umeda et al., 2017). An occupational therapist that is consulting for a community organization shares research and expertise within their scope of practice, identifies the needs for the organization, fosters social and policy changes, and advocates for the clientele's participation (Umeda et al., 2017). Advocating for this population can be completed in a traditional and/or community setting such as with AgrAbility.

There is limited research and evidence regarding OT in rural healthcare settings and in the agriculture community. In 2003 Peterson, Ramm, & Ruzicak reported that much of the agriculture population is underserved due to minimal practitioners working within the rural healthcare setting. Authors also found that this setting requires an increase in travel time and practitioners often lack education about this population (Peterson et al., 2003). Because this information is approximately 15 years old, it is important to acknowledge the lack of current research regarding this population, which demonstrates the importance of serving all populations, including the agriculture community.

Due to the increased risk factors for disability associated to farming, there is a greater opportunity for OT practitioners to treat this population (Waite, 2015). The multiple diagnoses farmers and ranchers experience are "respiratory disease, skin diseases, cancer, musculoskeletal disorders, chronic pain disorders, hearing loss, osteoarthritis, and even psychological disorders" (Waite, 2015, p. 13). Additionally, psychological impairments, such as suicide and depression are arising due to the stressors associated to farming. OT is a unique profession because it emphasizes the use of a holistic approach within all populations addressing not only physical impairments but psychological deficits as well (Waite, 2015).

OT's role in the agriculture setting is through the context of a cultural community (Hissong & Wilhite, 2008). The agriculture community has a deep root, which includes their sense of identity over multiple generations resulting in more than just a job and title; it is their way of life (Hissong & Wilhite, 2008). OT practitioners have the knowledge to increase a farmer's ability to return to his/her agriculture job and lifestyle by performing culture-relevant interventions (Hissong & Wilhite, 2008). To assist practitioners in working with the agriculture community, the Person-Environment-Occupation-Performance (PEOP) model can be used to guide the evaluation and treatment to increase independence in their meaningful life (Hissong & Wilhite, 2008). The PEOP model will help practitioners to gain a greater understanding of the farmer's identity and role before and after the injury and/or disability (Hissong & Wilhite, 2008).

The University of South Dakota recognized the potential for OT's role with farmers and in 2008 implemented a course to increase awareness and knowledge regarding the agriculture population (Smallfield & Anderson, 2008). The material consisted of "an introduction to agricultural occupational health, farm and ranch safety, a study of farm implements, adaptation of farm equipment for persons with disabilities, and rural behavioral health issues" (Smallfield &

Anderson, 2008, p. 371). Additionally, the students were required to spend one of the 12-week fieldwork rotations in a rural setting (Smallfield & Anderson, 2008). Through course evaluations, a common theme of positive attitudes towards this agriculture curriculum were identified, as well as, increased preparedness for working with this population during fieldwork (Smallfield & Anderson, 2008).

Occupational Therapy in a Community Setting

OT practitioners complete their job tasks in either a traditional or nontraditional setting (Gat & Ratzon, 2014). Typically, the traditional settings such as hospitals, skilled nursing facilities, outpatient services, and school settings have established roles for therapy staff and services are reimbursement through insurance and/or private pay (Gat & Ratzon, 2014). The non-traditional setting may not provide OT services at the site. Gat and Ratzon (2014) researched the perceptions of OT students participating in community-based fieldwork comparing the perceptions with those of students in a traditional fieldwork setting. The students in the community-based setting did not have an OT practitioner as a supervisor; however, the students in the traditional fieldwork setting had a registered OT supervisor (Gat & Ratzon, 2014). The students who completed community-based fieldwork rated their perception of responsibility, cultural competence, and personal skills much higher than the students in the traditional fieldwork setting (Gat & Ratzon, 2014). The researchers determined that community-based fieldwork requires the students to complete self-directed learning, engage with a culturally diverse population, and work with a variety of interdisciplinary teams (Gat & Ratzon, 2014). Additionally, it requires students to reflect on the OT model within the community-based organization (Gat & Ratzon, 2014). The student's DCE was a community-based site as there was no occupational therapist on staff, and the student was required to use OT knowledge

indirectly through advocacy by providing research skills, continuous quality improvement on projects, and developing disability awareness presentations.

OT practitioners provide services to various levels of organizations, but also provide consultation services to community-based organizations (AOTA, 2014). The practitioners may consult regarding "environment, ergonomic modifications, and compliance with the ADA" (AOTA, 2014, p. S11). OT practitioners can affect the client's life, indirectly, through advocacy, which can be implemented through talking with legislators and/or providing education on disability awareness (AOTA, 2014).

One role of an OT practitioner is as a community health advocate, which consists of identifying "social, physical, emotional, medical, educational, and occupational needs…" (Scaffa & Reitz, 2013, p. 6) of the community to maximize optimal functioning and allocate for various services to meet their needs. As an advocate, it is the practitioner's role to promote health and prevent disease and disability (Brownson, 2008). It is important to address health disparities in all populations to increase the quality of life for all individuals (Brownson, 2008).

OT has the knowledge and experience to work in traditional and nontraditional settings, and it is important to advocate for disability awareness to increase justice and quality of life for individuals with disabilities active in agriculture. Additionally, OT has a role in the agriculture community to close the gap of health disparities for the population. This student, through the DCE, will utilize the OT process to promote disability awareness amongst the youth population in partnership with AgrAbility.

Implementation Phase

Project Objectives and Methods

The purpose of the implementation phase was to deliver a presentation, "Youth in Agriculture" (see Appendix B for power point), that raised awareness about a variety of disabilities especially with an agricultural focus, and to further the youth populations' involvement in social and community relationships. The implementation phase consisted of the following steps presentation development, communication with agriculture educators, and implementation of the presentation.

Presentation development. The foundation of the presentation consisted of education and interactive activities regarding disabilities and the effect on agriculture-based work. Additionally, it was based on independent research from "The Perfect Fit" and the NAP curriculum "Assistive Technology for Rural Youth (AgrAbility, 2019b). The supplemental material, pictures and videos, was used to provide a holistic presentation that interested the participants.

OT introduction. To begin the presentation, the student's definition of OT was provided with various examples. To enhance the definition of OT, a video describing assistive technology in various occupations was shown to the participants. Additionally, an interactive activity was included, which explained activity analysis while participants simulated an activity of making a sandwich. The participants learned about the number of steps taken to complete an activity and the various physical and cognitive components that are required to initiate, attend, and complete a task. The activity analysis was included to improve the participants' understanding about how an OT practitioner evaluates and treats an agriculture worker with a disability, and how an OT

practitioner may implement the use adaptive equipment. This facilitated the connection between the OT student and the role with AgrAbility.

"The Perfect Fit" material. The content from "The Perfect Fit" material was utilized to guide the development of the "Youth in Agriculture" presentation. "The Perfect Fit" curriculum was established by the Purdue University Cooperative Extension Service, with the purpose of raising awareness of disabilities and explaining how to make 4H accessible for all individuals (Schnepf, Tormoehlen, & Field, 1992). The student updated the statistics from the established curriculum and added it to the "Youth in Agriculture" presentation. Information regarding the Americans with Disability Act (ADA) was incorporated in discussion points during the presentation to increase the participant's knowledge regarding disabilities at the federal level. The disabilities included in the student's presentation were based on the impairments that were discussed in the established curriculum. Additionally, the interactive activities in "The Perfect Fit Material" were utilized in the student's presentation. The activity, "Drinking Straws Galore," facilitated peer mentoring and social interactions to build the tallest or longest straw tower while simulating impairments: blindness, speech impairments, and upper extremity amputations (Schnepf et al, 1992). The activity "Socks, Socks, and More Socks" required students to place two pairs of socks on each hand, open a box of raisins, and take out the raisins individually. This interactive activity allowed the participants to gain a better understanding of how it may be to live with the impairments associated with muscular dystrophy, multiple sclerosis, and cerebral palsy, and CP (Schnepf et al., 1992). The activities allowed the participants to apply the education learned, and the interactive portion enhanced the participants of empathy and understanding of disabilities.

"Assistive Technology for Rural Youth" material. To encourage the learning process of the targeted audience, education and visualizations were provided regarding adaptive equipment utilized in an agriculture-based setting. The "Assistive Technology for Rural Youth" curriculum guided the discussion of assistive technology through the definitions and pictures. Additionally, the established curriculum guided the discussion about the societal attitudes associated with disabilities and how to eliminate barriers for individuals with disabilities (Breaking New Ground Resource Center, 2009).

Supplemental material. Videos that addressed societal attitudes related to disabilities were also incorporated into the presentation t. The videos depicted individuals with disabilities describing their story, which provided a different perspective of the student's. The individuals in the videos described their interest and involvement in activities, which are similar to the interests and hobbies of those participating in the presentation. In hopes to facilitate the participants' awareness of disabilities, the videos included peer-mentoring.

Community-based project opportunity. The "Youth in Agriculture" presentation included information about the services the NAP provides and the student's role with the NAP. Information regarding the Indiana AgrAbility Project's Bridging Horizons Contest was provided, which included education and visualizations. The purpose of this contest is to encourage youth's engagement in their community (Indiana AgrAbility, 2012). The objective of the Bridging Horizons Contest is to facilitate an increase in independence for an individual or a group of individuals within the community (Indiana AgrAbility, 2012). Visualizations were provided of youth groups that participated and placed in the top three in previous Bridging Horizon Contests. Additionally, the proposal that must be submitted following the community project was discussed with a brochure of the Bridging Horizons Contest was provided to the agriculture

educator. The topics listed above guided the development and delivery of the presentation. The presentation included various learning styles (pictures, videos, and interactive activities) to assist in maintaining the participants' attention and enhancing the learning process for those involved.

Communication with agriculture educators. Following the development of the presentation, an email was constructed and sent to all the agriculture educators in the state of Indiana through the Purdue list serve (email provider that includes all agriculture educators in Indiana). The email included an introduction of the student and the NAP, available youth resources from the NAP, and the opportunity for an onsite presentation. There were four agriculture educators from different Jr./Sr. high schools that responded to the student regarding the opportunity for an onsite presentation. The student then traveled and presented to four different Jr./Sr. high schools within the state of Indiana.

Implementation of Presentation

Approximately 239 students, grades 6^{th}-12^{th}, and four agriculture educators participated in the presentations. Each presentation was approximately 30-60 minutes in length depending on the duration of the class. The presentation was constructed to be approximately 45 minutes with extra time for questions and comments. For the shorter presentations (only at one school), the "Drinking Straws Galore" was eliminated and the multiple power point slides regarding adaptive equipment pictures were not discussed. Following the presentation, educators and students were asked to provide feedback regarding the presentation. The feedback was primarily positive such as enjoying the videos and hands-on activities with suggestions of seeing the adaptive equipment in person. Due to the sizes of adaptive equipment, it was not feasible to bring to the classrooms.

Leadership Development Phase

Through the implementation phase of the DCE project, the student developed as a professional in terms of the improvement of advocacy and program development skills. The nature of the NAP required the student to engage in self-directed learning, which facilitated leadership and professional skills. This promoted independence while completing the youth project and required the student to advocate for disability awareness.

By presenting to the youth population, the student increased professional skills of leading, communicating, and advocating. The student was required to manage a classroom of approximately 20 students while delivering the "Youth in Agriculture Presentation" and maintaining control during the interactive activities (multiple groups of students). The student improved communication skills through various emails and phone calls with the agriculture educators, as well as, connecting with the students during the presentations. Advocacy skills were increased by learning various ways to describe and demonstrate OT, disability awareness, and adaptive equipment throughout the various presentations.

Staff Development Phase

The student educated the NAP staff on the purpose of OT and the possibilities that the student could provide to the organization. This was an important first step, to initiate a positive relationship with the staff to ensure the sustainability of the project. Additionally, this initiated open communication between all staff members and the student to increase the collaborative approach on various projects and increased the interest in the OT approach.

Prior to implementation of the project, the student educated NAP staff and youth director on the importance of raising the youths' awareness of disabilities throughout Indiana. This prompted an open discussion regarding how NAP staff and the youth coordinator could

implement the presentation and findings in future curricula. Additionally, staff development was facilitated through the collaborative approach by the NAP staff taking time to edit the presentation and listen to feedback from the student regarding the presentations.

The leadership and staff development phases provided the opportunity for the student to develop as a young professional. This phase was enhanced by research, needs assessment, and project implementation phases. Additionally, a large number of individuals learned about disabilities and they have the resources to participate in community-based programs, which may facilitate an increase in their quality of life.

Discontinuation and Outcome Phase

Societal Need and Impact

There is a growing number of youths living and working on farms/ranches with an increasing number of injuries and deaths that occur on the farms/ranches. Additionally, there are many physical and mental disorders that limit agriculture performance in the youth, which may decrease quality of life (AgrAbility, 2019b). The student found that there was and continues to be a societal need to educate the youth population on disability awareness, safety in the agriculture industry, and advocate about assistive technology. To meet this societal need, the student developed a presentation that was given to various Jr./Sr. high school agriculture classes to expand their knowledge about disabilities and the AgrAbility projects. This presentation addressed the societal need by discussing safety precautions in agriculture and educating the youth on disabilities.

Project Outcomes

The GAS was utilized during the DCE to guide the implementation phase and to measure the outcome of each goal. There were three objectives for this DCE: present to three Jr./Sr. high

schools' agriculture classes regarding disability awareness within agriculture (Goal A); reach/identify three youth, with disabilities active in agriculture, to attend the 2019 AgrAbility NTW (Goal B); provide three ideas and/or resources to the AgrAbility youth coordinator to enhance youth involvement in the AgrAbility project (Goal C). See Appendix A, figure 2A for the complete GAS of Goals A, B, and C.

Goal A. Presentations were given to four different Jr./Sr. high schools' agriculture classes. Based on the GAS, the student scored a (+1) meaning "somewhat more than expected". The "expected" scored for the GAS was for the student to present at three schools. This goal was completed during the implementation phase to increase awareness regarding disabilities within Agriculture. The highest score on the GAS was presenting to five different schools and was chosen based on the number of educators that responded to the initial email.

Goal B. There were two youth, with disabilities active in agriculture, which attended the 2019 AgrAbility NTW. The score of this goal was (-1) meaning "somewhat less than expected". The "expected" score was three youth that attended and the "much more than expected" score was five youth that attended. The maximum score of five youth was chosen due to the limited amount of grant funding to provide stipends for this population. Originally, three youth, with disabilities active in agriculture, were identified and planned to attend the 2019 AgrAbility NTW; however, approximately three weeks prior to the workshop, one youth reported not being able to attend. Even though the goal of three youth, with disabilities active in agriculture, was not reached, the student was able to identify many potential youths that may participate in the AgrAbility Project.

Goal C. There were three ideas/resources given to the AgrAbility youth coordinator to enhance youth involvement in the AgrAbility Project. This score was "expected" based on the

GAS. The maximum score of five ideas/resources was based on informal conversations with the site mentor and the youth director. The ideas/resources given to the coordinator consisted of the "Youth in Agriculture" presentation, three youths' contacts (with their permission) to utilize in the future as an advocate for the population, and the youth director's participation in the youth dinner at the 2019 AgrAbility NTW. This goal was achieved following the implementation phase and was created for the sustainability of the program.

The GAS was utilized to guide the project and helped the student to measure how the societal need was met. The societal need was met by providing education to many younger individuals in hopes to increase awareness about disabilities and increase the involvement of youth in the AgrAbility project. Additionally, the DCE project was developed for sustainability, which will continue to ensure the societal need is met.

Project Continuation

Various steps were taken to ensure the ongoing process for quality improvement of this project. The youth presentation was an initial step taken to expand services to the youth population; however, the sustainable tasks of including youth at the NTW and providing ideas/resources to the AgrAbility youth director were the key items to project continuation. The site mentor's goal was to expand to the youth population by inviting them to the 2019 AgrAbility NTW and provide the individuals with a stipend from a grant. The student constructed an email regarding the opportunity, for youth with disabilities in agriculture, to apply and attend the NTW. The email was sent through the AgrAbility list serve, which is an online emailing system that has the email addresses of the SRAPs, state university extension agents, assistive technology professionals, and other health-related professionals on one email listing. This initiated multiple conversations regarding youth, with disabilities active in agriculture, across the United States

with six applications submitted. However, only two youth with disabilities committed to attending the conference. Additionally, two typically developing youth attended conference with their parents. A youth dinner was arranged for youth (with and without disabilities), parents, student, and youth coordinator to attend and discus various routes to implement a youth section at the conference. The topics discussed during dinner were the possible funding sources available to provide stipends for youth to attend NTW and adding youth advocates to the advisory board of the NAP. All ideas discussed were documented and the youth director will incorporate the information into yearly goals for the NAP. Additionally, the youth director identified one youth with a disability and one youth without a disability to be a part of the advisory board for the NAP, which will allow the youth to voice opinions about involvement of the population in the AgrAbility projects. By getting youth on the advisory board, the youth director will be able to continue reaching out to this population and develop a youth section at the NTWs.

To further the sustainability of the project, the student educated the youth director on the "Youth in Agriculture" presentation, which can be implemented in schools or youth-based meetings/conferences such as the National FFA Conference. The student provided the youth director with many resources: youth with disability statistics, youth disability prevalence rate in the agriculture community, benefits of youth's community and social participation, and interventions to increase quality of life for youth. This information was explained to the youth director and can be utilized in the grant writing process. Providing these ideas/resources will further the process of expanding AgrAbility services to the youth population.

Conclusion

Communication

The NAP staff worked independently and collaboratively with one another while interacting through written, oral, and nonverbal communication with the client, family, significant others, community, colleagues, health providers, and other professionals.

Client. There were several clients that were a part of this DCE. The youth population was the primary client for the student and required various types of communication skills. Verbal communication was utilized to educate the youth on disability awareness and written communication allowed the youth to learn by reading and listening. The student was required to implement nonverbal communication by incorporating positive body language into conversations to promote a positive rapport between the student and youth.

Another client during this project were the farmers, ranchers, and veterans that reached out for AgrAbility's resources and services. In many cases, the client's family and significant other were a part of the client's recovery process. The types of communication used to evaluate and educate the client and their family/significant other was a combination of written, oral, and nonverbal. The oral communication was intended to build rapport and a meaningful relationship to make the evaluation and treatment plan as inclusive as possible. Nonverbal communication was utilized during farm visits to help the client feel comfortable and to divulge information about their life, which was done by demonstrating empathy and encouragement through body language. Written communication consisted of the document of referred equipment for the client and brochures that provide education on the adaptive equipment.

Community. The local communities were primary supporters of the AgrAbility project and contributed significantly to its success. AgrAbility staff completed oral communication to

expand the knowledge about the project to local businesses such as Rural King, Tractor Supply, local feed mills, Farm Bureau Agencies, and state university extension agents. Written communication was completed through social media posts, letters, emails, and newspapers. The student completed various forms of communication in the community by volunteering at the local Ag Day and discussed the project with various individuals. Written communication was seen by the local newspaper printing a story about the student's presentation at the local middle school. Nonverbal communication was limited in this setting, but when it was implemented it focused on positive body language to facilitate meaningful conversations about the NAP.

Colleagues and professionals. There were daily opportunities for the student to communicate with various NAP/SRAP staff and consulting professionals through oral and written skills. There were times the student completed oral communication with the NAP staff through informal discussions, phone calls with SRAP employees, and other health professions (OT consults for AgrAbility). The student communicated through writing, in the form of email, to many employees and health professionals who worked remotely. Nonverbal communication was utilized during face to face meetings with individuals and focused on positive body language.

The various communication skills increased the student's professional skills, which indirectly increased other skills: acknowledging time zones, time management skills, efficient writing skills, and confidence in communicating in various ways. Overall, the communication during the DCE was an underlying skill that promoted the development of leadership and advocacy.

Leadership Skills

The student developed various leadership skills during the DCE. This site required self-directed learning with limited direct supervision, which required the student to take on tasks as appropriate. Prioritizing various tasks required the student to manage time wisely and reach out for assistance as needed. Through research, writing, networking, communicating, and working on various projects, the student learned leadership skills that have contributed to becoming a young professional that are transferable to other occupations. Additionally, due to this being a community setting and no occupational therapists on staff, the NAP staff looked to the student as a leader in the field of OT. This provided more opportunities for the student to participate in various tasks as it is a focus of the NAP to be inclusive of other disciplines and professionals.

Weekly staff meetings. The student participated in weekly NAP staff meetings, which lasted approximately two hours. The meetings consisted of each person giving an update about their project that was being completed. Participation in the meetings improved this student's confidence because the student was able to work collaboratively with other students and provide feedback to improve the quality of all projects facilitating good communication and problem-solving skills.

Presentations to occupational therapy programs. The student presented to approximately 90 OT students at two different universities in the state of Indiana. The presentation consisted of bridging the gap between health professionals and the NAP. The student advocated about an occupational therapists' role within the agriculture community, and how a therapist can reach out to the NAP as a resource for a client. Through the process of this presentation, the student refined the skills of communication, research, and advocacy.

Farm shows and agriculture conferences. The NAP attended various farm machinery shows and agriculture-based conferences throughout the Midwest. The student assisted in managing the booths at various shows and conferences, which increased communication and advocacy skills. While working at the AgrAbility booth, the student was required to be knowledgeable of the services the NAP provided and delivered this information in an efficient manner. Additionally, an elevator speech about OT and the student's application to the NAP was provided to individuals that inquired while visiting the booth. During the 2019 Indiana Horticulture Congress, the student partnered with the AgrAbility Assistive Technology Specialist to deliver a presentation, "Perpetuate Your Season Despite Age or Mobility." The student provided education and visuals regarding musculoskeletal injuries associated to horticulture and safe body mechanics to increase safety during the occupation.

Safety training meetings. The student presented at the Purdue Agriculture Research Farm yearly safety trainings. The OT student utilized background information from various biomechanics courses to develop a musculoskeletal presentation. This required the student to provide education, visuals, and demonstrate safe ergonomics and body mechanics to prevent musculoskeletal injuries in agriculture-based work. The opportunity allowed the student to increase advocacy, communication skills, and networking.

Contribution to NAP resources. Increased research and writing skills were developed through contribution to the "Low Vision Plowshare" and "Conducting Agriculture Worksite Assessments: 4th Edition". The "Low Vision Plowshare" was in the process of being revised from a prior version and required the student to use OT knowledge and research skills to assist in editing. This document discussed adaptive equipment that individuals with low vision can incorporate into their daily work on the farm. Additionally, the student collaborated on the

"Conducting Agriculture Worksite Assessments: 4th edition" by analyzing the material to ensure it was inclusive of various disciplines including OT. This assessment is a guide for health professionals that may conduct a work-site assessment on the farm and/or ranch.

NTW. The student participated in educational sessions and coordinated meetings at the 2019 AgrAbility NTW. Attendance at various sessions allowed the student to grow as a professional by increasing awareness of other disciplines and organizations that assist individuals with disabilities. The student organized a breakfast for OT practitioners, that attended NTW, to provide a networking opportunity. Another task the student was challenged with consisted of inviting youth with disabilities to attend the conference. The student connected with three youth and their parents who attended the conference and set up a dinner for all youth and parents to attend. This allowed the peers to interact and learn more about one another and provided an opportunity for the NAP to find advocates for their youth curriculum. The opportunity allowed the student to organize and lead a group meeting, as well as, communicate to individuals aged 7-15 years old. An additional task that the student took on was the development of continuing education units (CEU) for OT practitioners in attendance at NTW. The student researched and reached out to an occupational therapist regarding (CEU) requirements for the state of Nebraska. Following the research, the student compiled a packet: information and directions for CEUs, tracking sheet with OT justification, presenter biographies, and signed certificate.

American Occupational Therapy Association annual conference and expo. The NAP provided financial support for the student to attend the 2019 American Occupational Therapy Association (AOTA) Annual Conference and Expo to set up, execute, and tear down an AgrAbility booth in the expo hall. This allowed the student to advocate about OT in the agriculture setting and provide resources other therapists could refer to. The student collected

demographic data of the professional networking event and provided it to the NAP project coordinator. Additionally, the student organized, packed, and shipped all required booth materials for the conference. This opportunity allowed the student to experience management skills such as leading, advocacy, and planning an event.

Self-directed learning. Each NAP staff member completed independent work and there were various roles that make it a successful organization. Everyone has specific responsibilities that require independent and collaborate work. All staff are treated equally even though job titles and responsibilities may differ from one another. This atmosphere has allowed the student to develop leadership skills that are transferrable to other professional settings. The leadership skills consist of taking initiative on various tasks, researching prior to asking questions, and prioritizing tasks. Additionally, the student developed a networking foundation that is supportive of future work. The NAP office was in a different building due to renovations resulting in the site mentor's office being located on a different floor in the building. This required the site mentor and student to develop a professional relationship that required meeting each week to discuss the progress of the DCE. Additionally, the student worked in the same office as other NAP employees, which allowed the opportunity for assistance and resources as needed.

Advocacy Skills

The *Occupational Therapy Practice Framework: Domain & Process 3rd Edition* (2014) describes advocacy as promoting occupational justice and empowering the client. Advocacy supports the client in their health and wellness to participate in occupations and facilitate an increase in healthy occupational performance (AOTA, 2014). The student's primary focus during the DCE was advocacy, which consisted of advocating for OT, the youth population, and the NAP.

OT. The student advocated for OT within this community-based setting due to the NAP having limited interaction with the OT profession. The student became proficient with an "elevator speech" about OT and the student's purpose in this setting. Additionally, the student advocated to occupational therapists and students about their role within the agriculture community. By advocating, it allowed many individuals to learn about the purpose of OT and the widespread populations and settings that can be reached.

Youth population. Advocacy was utilized to address occupational justice within this population. The student was passionate about advocating for disability awareness within the youth population and raise awareness about safety in an agriculture-based program. Many times, young individuals raised on the farm are not educated on the risks of agriculture, so the "Youth in Agriculture" presentation addressed occupational justice to ensure individuals have knowledge of risk for injuries in agriculture.

National AgrAbility Project. The student utilized advocacy skills during the DCE to promote occupational participation for clients of the NAP organization. This consisted of engaging in therapeutic use of self to facilitate the client's engagement in meaningful occupations through the use of assistive technology. Additionally, this required advocating for OT by writing justifications for the recommended assistive technology, and sending the referrals to vocational rehabilitation workers, which provided finances for the technology required. Advocating for the client, initiated self-advocacy within the client and assisted in engaging the client in meaningful occupations and increasing quality of life.

Advocacy was utilized during the entire process of the DCE and increased this student's leadership skills. This allowed the student to be proactive about addressing occupational justice in different populations, which transferred into the client's self-advocacy skills. This skill had a

ripple effect, which started with the student, transferred to the multiple clients, and continued into the community.

References

AgrAbility. (2019a). About AgrAbility. Retrieved from http://www.agrability.org/about/.

AgrAbility. (2019b). Youth. Retrieved from http://www.agrability.org/resources/youth/.

American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain & Process 3rd edition. *The American Journal of Occupational Therapy, 68*(Supplement 1), S1-S48.

Anaby, D., Law, M., Coster, W., Bedell, G., Khetani, M., Avery, L., & Teplicky, R. (2014). The mediation role of the environment in explaining participation of children and youth with and without disabilities across home, school, and community. *Archives of Physical Medicine and Rehabilitation, 95*(5), 908-917.

Bonnel, W., &Smith, K. (2017). *Proposal writing for clinical nursing and DNP projects.* Springer Publishing Company.

Bedell, G., Coster, W., Law, M., Liljenquist, K., Kao, Y. C., Teplicky, R., … & Khetani, M. A. (2013). Community participation, supports, and barriers of school-age children with and without disabilities. *Archives of physical medicine and rehabilitation, 94*(2), 315-323.

Breaking New Ground Resource Center. (2009). Assistive technology for rural youth. [PDF File]. Retrieved from http://www.agrability.org/wp-content/uploads/2015/11/curriculum_1-24-14.pdf.

Brownson, C. A. (2008). Occupational therapy services in the promotion of health and the prevention of disease and disability. *The American Journal of Occupational Therapy, 62*(6), 694.

Bureau of Labor Statistics. (2018). National census of fatal occupational injuries in 2017. [PDF

file]. *U.S. Department of Labor.* Retrieved from https://www.bls.gov/news.release/pdf/cfoi.pdf/.

Carter, E., W., Common, E. A., Srechovic, M. A., Huber H. B., Bottema-Beutel, K., Gustafson, J. R., … & Hume, K. (2014). Promoting social competence and peer relationships for adolescents with autism spectrum disorders. *Remedial and Special Education, 35*(2), 91-101.

Carter, E. W., Biggs, E. E., & Blustein, C. L. (2016). Relationships matter: Addressing stigma among children and youth with intellectual disabilities and their peers. *Intellectual Disability and Stigma: Stepping Out from the Margins* (pp.149-164). Palgrave Macmillan, London.

FFA. (2018). Our membership. Retrieved from https://www.ffa.org/our-membership/.

Gat, S. & Ratzon, N. Z. (2014). Comparison of occupational therapy students' perceived skills after traditional and nontraditional fieldwork. *American Journal of Occupational Therapy, 68,* e47-e54.

Hissong, A. N. Wilhite, C. (2008). Occupational therapy's role with farmers with disabilities or disease: Understanding the cultural factor of farming as a way of life. *OT Practice, 13*(13), 1-8.

Hochman, J. M., Carter, E. W., Bottema-Beutel, K., Harvey, M. N., & Gustafson, J. R. (2015). Efficacy of peer networks to increase social connections among high school students with and without autism spectrum disorder. *Exceptional Children, 82*(1), 96-116.

Indiana AgrAbility. (2012). Bridging horizons community service contest. Retrieved from https://engineering.purdue.edu/~bng/horizons.php.

Keith, J. M., Bennetto, L., & Rogge, R. D. (2015). The relationship between contact and

attitudes: Reducing prejudice toward individuals with intellectual and developmental disabilities. *Research in developmental disabilities, 47*, 14-26.

Law, M., Anaby, D., Imms, C., Teplicky, R., & Turner, L. (2015). Improving the participation of youth with physical disabilities in community activities: An interrupted time series design. *Australian Occupational Therapy Journal, 62*(2), 105-115.

Law, M., Finkelman, S., Hurley, P., Rosenbaum, P., King, S., King, G., & Hanna, S. (2004). Participation of children with physical disabilities: Relationships with diagnosis, physical function, and demographic variables. *Scandinavian Journal of Occupational Therapy*, 11, 156-162.

Maxwell, J. A. & Loomis, D. M. (2003). Mixed methods design: An alternative approach. *Handbook of mixed methods in social and behavioral research, 1,* 241-272.

Miller, C. D. & Aherin, R. A. (2018). The prevalence of disabilities in the U.S. farm population. *Journal of Agricultural Safety and Health*, *24*(4), 243-260.

National Children's Center for Rural and Agricultural Health Safety. (2017). 2017 fact sheet: Childhood agricultural injuries in the U.S. [PDF file]. Retrieved from https://www.marshfieldresearch.org/Media/Default/NFMC/PDFs/2017%20Child%20Ag%20Injury%20Fact%20Sheet.pdf.

Peterson, C., Ramm, K., & Ruzicka, H. (2003). Occupational therapists in rural healthcare: A "jack of all trades". *Occupational Therapy in Health Care*, *17*(1), 55-62.

Pettigrew, T. F. (1988). Intergroup contact theory. *Annual Review of Psychology*, *49*(1), 65-85.

Peterson, C., Ramm, K., & Ruzicka, H. (2003). Occupational therapists in rural healthcare: A "jack of all trades". *Occupational Therapy in Health Care*, *17*(1), 55-62.

Scaffa, M. E., & Reitz, S. M. (2013). *Occupational therapy community-based practice settings.* FA Davis.

Schnepf, G. W., Tormoehlen, R. L, Field, W. E. (1992). A perfect Fit. *Purdue University Cooperative Extension Service.* West Lafayette, IN: Purdue University.

Smallfield, S. & Anderson, A. J. (2008). Addressing agricultural issues in health care education: An occupational therapy curriculum program description. *The Journal of Rural Health, 24*4), 369-374.

Spagnolo, A. B., Murphy, A. A., & Libera, L. A. (2008). Reducing stigma by meeting and learning from people with mental illness. *Psychiatric rehabilitation journal, 31*(3), 186-193.

Talò, C., Mannarini, T., & Rochira, A. (2014). Sense of community and community participation: A meta-analytic review. *Social indicators research, 117*(1), 1-28.

Umeda, C. J., Fogelberg, D. J., Jirikowic, T., Pitonyak, J.S., Mroz, T. M., & Ideishi, R.I. (2017). Expanding the implementation of the americans with disabilities act for populations with intellectual and developmental disabilities: The role of organization-level occupational therapy consultation. *American Journal of Occupational Therapy, 71*(4), 7104090010-7104090010p6.

United States Department of Agriculture. (2018). Farms and Land in Farms. [PDF file]. Retrieved from https://downloads.usda.library.cornell.edu/usda-esmis/files/5712m6524/3j333500g/ht24wn24x/FarmLandIn-02-16-2018.pdf.

Waite, A. (2015). A growing opportunity: OT's role helping farmers and ranchers. *OT Practice,* 12-16.

Appendix A

Figures of the Goal Attainment Scale

Success	**Goal**	**Goal**	**Goal**
Level of Predicted Attainment	*Number of Jr/Sr High Schools Agriculture Classes Reached to Give Presentation Regarding Disability Awareness within Agriculture*	*Number of Youth with Disabilities Active in Agriculture Reached and Attending the 2019 AgrAbility National Training Workshop (NTW)*	*Contribution of ideas and/or resources to the AgrAbility youth coordinator to enhance youth involvement in the AgrAbility Project*
Much Less Than Expected -2	Presentation Given to 1/5 Jr/Sr High Schools' Agriculture Classes	1 Youth Identified and Attending the 2019 AgrAbility NTW	1 idea and/or resources given to the AgrAbility youth coordinator
Somewhat Less Than Expected -1	Presentation Given to 2/5 Jr/Sr High Schools' Agriculture Classes	2 Youth Identified and Attending the 2019 AgrAbility NTW	2 ideas and/or resources given to the AgrAbility youth coordinator
Expected	Presentation Given to 3/5 Jr/Sr High Schools' Agriculture Classes	3 Youth Identified and Attending the 2019 AgrAbility NTW	3 ideas and/or resources given to the AgrAbility youth coordinator
Somewhat More Than Expected +1	Presentation Given to 4/5 Jr/Sr High Schools' Agriculture Classes	4 Youth Identified and Attending the 2019 AgrAbility NTW	4 ideas and/or resources given to the AgrAbility youth coordinator
Much More Than Expected +2	Presentation Given to 5/5 Jr/Sr High Schools' Agriculture Classes	5 Youth Identified and Attending the 2019 AgrAbility NTW	5 ideas and/or resources given to the AgrAbility youth coordinator

Figure 1A. Goal Attainment Scale. Original GAS that was used to guide the implementation and discontinuation phase of the DCE.

Success	**Goal**	**Goal**	**Goal**
Level of Predicted Attainment	*Number of Jr/Sr High Schools Agriculture Classes Reached to Give Presentation Regarding Disability Awareness within Agriculture*	*Number of Youth with Disabilities Active in Agriculture Reached and Attending the 2019 AgrAbility National Training Workshop (NTW)*	*Contribution of ideas and/or resources to the AgrAbility youth coordinator to enhance youth involvement in the AgrAbility Project*
Much Less Than Expected -2	Presentation Given to 1/5 Jr/Sr High Schools' Agriculture Classes	1 Youth Identified and Attending the 2019 AgrAbility NTW	1 idea and/or resources given to the AgrAbility youth coordinator
Somewhat Less Than Expected -1	Presentation Given to 2/5 Jr/Sr High Schools' Agriculture Classes	**2 Youth Identified and Attending the 2019 AgrAbility NTW**	2 ideas and/or resources given to the AgrAbility youth coordinator
Expected	Presentation Given to 3/5 Jr/Sr High Schools'	3 Youth Identified and Attending the 2019	**3 ideas and/or resources given to the**

	Agriculture Classes	AgrAbility NTW	**AgrAbility youth coordinator**
Somewhat More Than Expected +1	**Presentation Given to 4/5 Jr/Sr High Schools' Agriculture Classes**	4 Youth Identified and Attending the 2019 AgrAbility NTW	4 ideas and/or resources given to the AgrAbility youth coordinator
Much More Than Expected +2	Presentation Given to 5/5 Jr/Sr High Schools' Agriculture Classes	5 Youth Identified and Attending the 2019 AgrAbility NTW	5 ideas and/or resources given to the AgrAbility youth coordinator

Figure 2B. A complete GAS that exhibits the outcomes of the DCE project.

Appendix B

"Youth in Agriculture" Power Point

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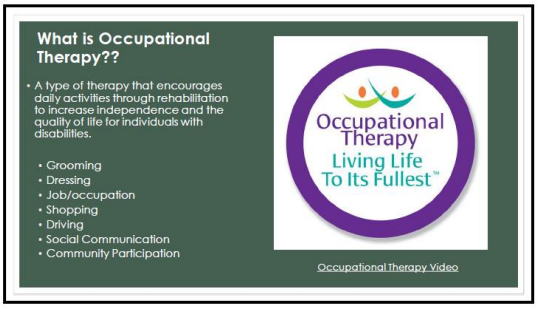

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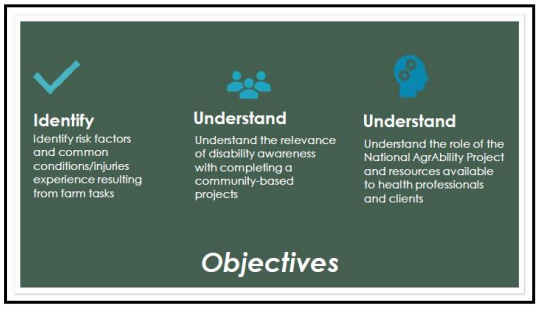

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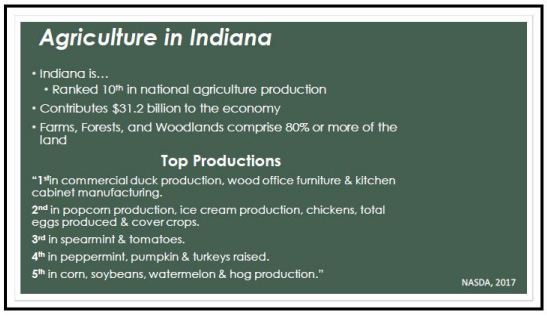

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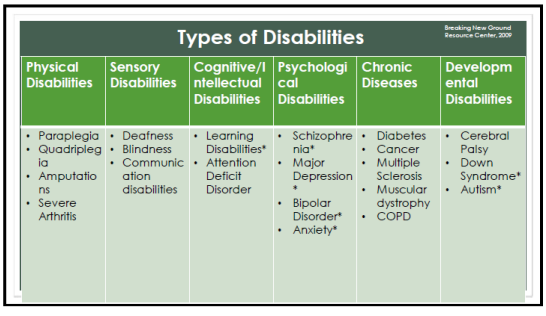

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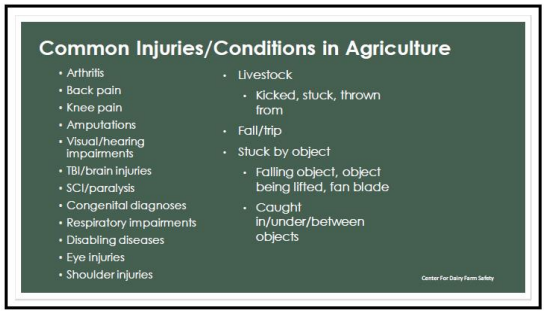

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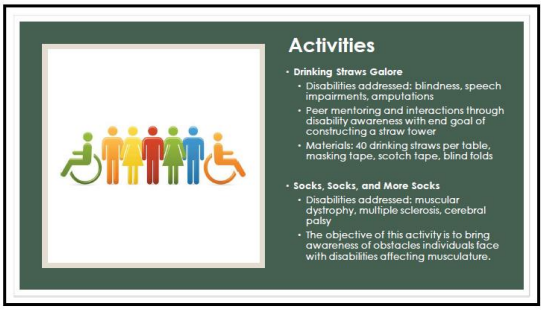

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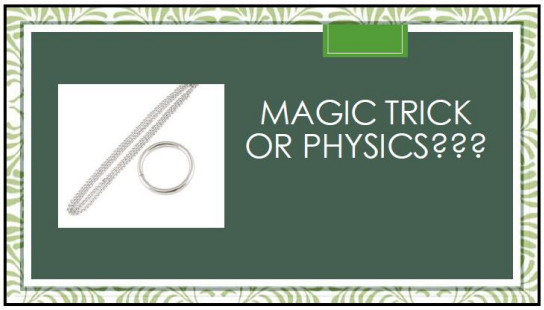

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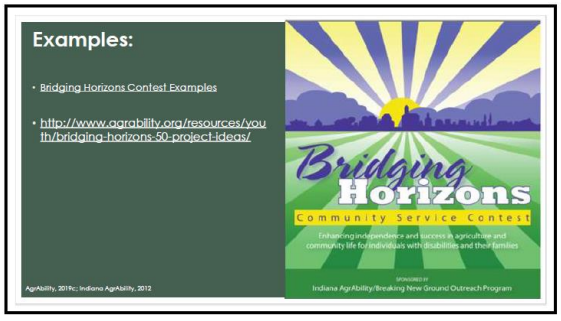

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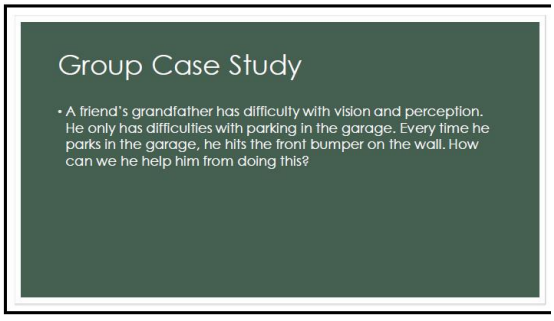

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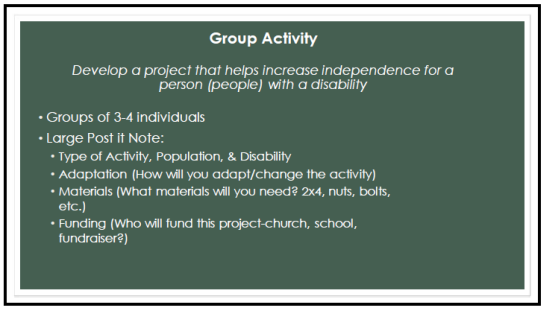

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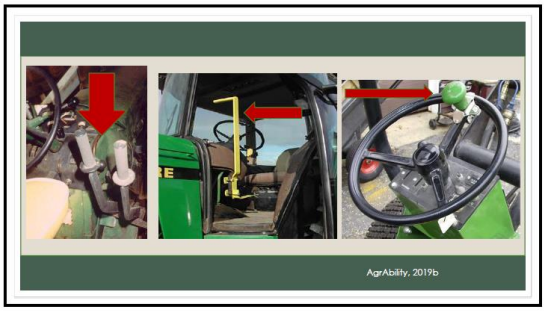

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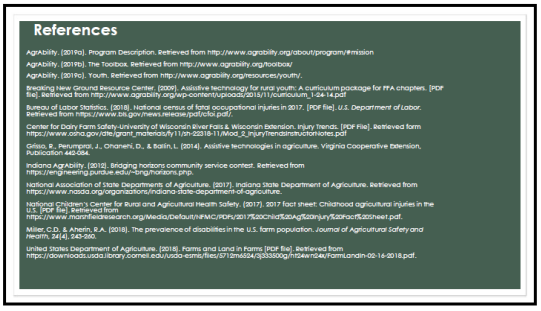

References

AgrAbility. (2019a). Program Description. Retrieved from http://www.agrability.org/about/program/#mission

AgrAbility. (2019b). The Toolbox. Retrieved from http://www.agrability.org/toolbox/

AgrAbility. (2019c). Youth. Retrieved from http://www.agrability.org/resources/youth/.

Breaking New Ground Resource Center. (2009). Assistive technology for rural youth: A curriculum package for FFA chapters. [PDF file]. Retrieved from http://www.agrability.org/wp-content/uploads/2015/11/curriculum_1-04-14.pdf

Bureau of Labor Statistics. (2018). National census of fatal occupational injuries in 2017. [PDF file]. *U.S. Department of Labor.* Retrieved from https://www.bls.gov/news.release/pdf/cfoi.pdf/.

Center for Dairy Farm Safety-University of Wisconsin River Falls & Wisconsin Extension. Injury Trends. [PDF File]. Retrieved form https://www.cchs.gov/ctte/grant_materials/fy11/sh-22518-11/Mod_2_InjuryTrendsInstructionNotes.pdf

Grisso, R., Perumpral, J., Ohaneni, D., & Balin, L. (2014). Assistive technologies in agriculture. Virginia Cooperative Extension, Publication 445-084.

Indiana AgrAbility. (2018). Bridging horizons community service contest. Retrieved from https://engineering.purdue.edu/~bng/horizons.php.

National Association of State Departments of Agriculture. (2017). Indiana State Department of Agriculture. Retrieved from https://www.nasda.org/organizations/indiana-state-department-of-agriculture.

National Children's Center for Rural and Agricultural Health Safety. (2017). 2017 Fact sheet: Childhood agricultural injuries in the U.S. [PDF file]. Retrieved from https://www.marshfieldresearch.org/Media/Default/HMC/PDFs/2017%20Child%20Ag%20Injury%20Fact%20Sheet.pdf.

Miller, C.D., & Ahern, R.A. (2018). The prevalence of disabilities in the U.S. farm population. *Journal of Agricultural Safety and Health, 24*(4), 243-260.

United States Department of Agriculture. (2018). Farms and Land in Farms [PDF file]. Retrieved from https://downloads.usda.library.cornell.edu/usda-esmis/files/6712m6524/3j333500g/hf54wn24k/FarmLandIn-02-16-2018.pdf.

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References: Pictures/Videos

- https://www.youtube.com/watch?v=eaH1RgkmbD8
- https://www.winfieldunited.com/About/History
- Https://www.winfieldunited.com/About
- https://twitter.com/agrabilitywi/status/788472134397943808
- https://www.indystar.com/story/sports/college/purdue/2018/10/22/tyler-trent-you-should-know-incredible-purdue-university-terminal-bone-cancer-fighter-carmel-indiana/1729530002/
- http://www.globalliftcorp.com/the-importance-of-disability-awareness-and-getting-involved/
- https://www.youtube.com/watch?v=eaH1RgkmbD8
- https://www.youtube.com/watch?v=vZ-MUlfyTPQ
- https://www.youtube.com/watch?v=le80TISX7s
- https://www.youtube.com/watch?v=4c5fELuw4QQ
- https://vimeo.com/215818795
- https://www.fourmine.com/education/metal-education
- https://www.golfchannel.com/video/gary-woodland-surprises-special-olympics-golfer
- https://www.youtube.com/watch?v=X6b6a77JMVA
- Https://www.youtube.com/watch?v=YN86bPSPT4

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