

## **Skills on Wheels: Program Dissemination and Fidelity**

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OCTH T830: Leadership Seminar & Capstone

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April 14, 2023

### **Acknowledgements**

I would like to express sincere gratitude to my mentor and capstone facilitator, Tony Chase, for the invaluable feedback and encouragement throughout the capstone experience. My capstone project and its success would not be possible without Dr.Chase's support, patience, and willingness to teach. I also want to thank Lisa Kenyon for her collaboration, research guidance, time, and passion. Finally, I would like to thank the Skills on Wheels team with special acknowledgements to Alex Prentice, Rachel Heminger, Niki Hoseinpour, Maria Stiens, and Madison Loeser, as their contributions and support have advanced this project.

### **Abstract**

The doctoral capstone experience is a 14-week self-directed learning experience for doctoral occupational therapy students. The purpose of this capstone was to advance career skill sets in a unique manner that align with the Accreditation Council for Occupational Therapy Education (ACOTE) educational standards (DeJuliis & Bednarski, 2019). The capstone experience is client-centered and needs based project, with a needs assessment and literature review completed. The capstone was completed with the Skills on Wheels (SoW) program and targeted the following ACOTE standards: program development, research skills, administration, and leadership. These standards were achieved through conducting research with another SoW site, initiating and completing program development tasks for the third iteration of the program, and creating a program manual outline for dissemination purposes.

### **Skills on Wheels: Program Dissemination and Fidelity**

Skills on Wheels is a nonprofit wheelchair skills training program developed at Indiana University-Purdue University Indianapolis (IUPUI) by Director Tony Chase, professor and researcher at IUPUI. This program was also developed in partnership with Crann Centre in Cork, Ireland. SoW is a boot-camp style program that provides free services to children aged 8-17 years old using manual wheelchairs for functional mobility. SoW also educates and trains the participants' families during sessions to encourage family-centered interventions. The program is evidence-based and utilizes the Wheelchair Skills Program Manual Version 5.2 (Kirby et al., 2021) to target over 33 wheelchair skills on an individualized basis. SoW launched in 2021 and has accomplished two successful runs, with the upcoming program in April, 2023. In addition to Tony Chase, SoW is operated by IUPUI faculty, occupational therapists, and volunteers. Most volunteers are IUPUI occupational therapy and physical therapy students, however, this population is increasingly diversifying. The program's success has resulted in rapid internal and external expansion, with various organizations interested in adopting SoW. As Skills on Wheels gains attraction, a sustainable method for program dissemination is required. SoW hopes to not only develop a method to easily replicate the program, but to implement it successfully based on the specific needs of the community. There are currently several locations that have already adopted the Skills on Wheels program including: Quebec City, Canada; Montreal, Canada, and Grand Rapids, Michigan. Maintaining program fidelity while honoring community and cultural differences is a complex process with dissemination. Thus, this capstone aims to address these challenges through research and program development. Research was conducted with the newly adopted program in Grand Rapids to further understand how program fidelity components contribute to varying program outcomes. In addition, program development initiatives such as

organizational efforts and the creation of a program manual outline were developed to contribute to improved dissemination processes.

## **Needs Assessment**

### **Background Literature**

Skills on Wheels allows for participants to have increased quality of life and improved functional mobility. Functional mobility is a fundamental human right and allows for individuals to move independently, safely, and effectively in various environments. For over 77 million people worldwide, functional mobility is achieved through wheelchair personnel (World Health Organization, 2011). Although, if one is lacking the wheelchair skills (WCS) necessary to effectively navigate the community, factors such as: life satisfaction, occupational performance, independence, community participation, and personal safety are jeopardized (Hosseini et al., 2012), (Best, Routhier, & Miller, 2014). Despite the United Nations (2022) and World Health Organization (2011) acknowledging wheelchair training as an essential tool for wheelchair use, it is often neglected in the healthcare world (Best, Routhier, & Miller, 2014). Many factors contribute to limited mobility training such as: limited time and resources to deliver such services, limited clinician knowledge and confidence of teaching skills and techniques past basic wheelchair skills and (i.e. braking, rolling, transfers) (Giesbrecht et.al, 2015). Although clinicians such as occupational and physical therapists demonstrate basic WCS knowledge (Best, Routhier, & Miller, 2014), the environment requires use of complex skills to navigate steep inclines, potholes, gravel, curbs, and more (Kirby et al., 2006). There is a need for increased WCS training that teaches complex skills, is taught by educated and confident trainers, and is also affordable.

There is evidence that comprehensive boot-camp style wheelchair training programs result in an increased ability to perform wheelchair skills (Keeler et al., 2020). With the growing success of Skills on Wheels and interest from various programs worldwide, it is important to create a sustainable method for replicating the program as effectively as possible. The more families that SoW reaches, the more manual wheelchair users that feel safe and confident navigating the world. In the following text, the capstone process is described and its contribution to manual wheelchair training programs.

### **Needs Assessment Process and Purpose**

During the first screening and evaluation portion of the capstone experience, it is important to complete a needs assessment with the site stakeholders to determine the needs of the community (DeIuliis & Bednarski, 2019). Occupational therapists prioritize client-centered practices and emphasize meaningful interventions that align with the clients' needs, values, and beliefs. Conducting a formal needs assessment allows for the collection and application of meaningful information from the site itself through these client-centered principles.

The needs assessment is composed of multiple parts, referred to as phases. The first phase, Phase I, is to complete a community profile to obtain a greater understanding of the site's goals, culture, and community. The second phase, Phase II, is to conduct an interview with the site stakeholders to collect first-hand information about the site's needs. This is a useful method for obtaining objective information about the site and target population, as well as the subjective perception of the program from the site mentor's perspective (DeIuliis & Bednarski, 2019). It is the duty of the therapist to integrate themselves in the community and adjust according to the site's culture; and conducting an interview achieves this goal. Both phases lead to a greater

understanding of the site's culture in addition to aiding in the development of a capstone project that is most beneficial to the site.

### **Phase I: Community and Service Profile**

This capstone project integrates two different communities, and therefore warrants the completion of two community profiles. The first site location is at the Skills on Wheels program at IUPUI in Indianapolis, Indiana. This is where the program development portion of the capstone occurred, as well as direct involvement with the wheelchair training sessions.

According to the United States Census Bureau (n.d.), Indianapolis houses approximately 882,039 individuals. Unfortunately, there is no available information regarding children that use manual wheelchairs for functional mobility in Indiana. However, the estimated number of adults in Indiana with a mobility impairment in 2020 was about 12% (Centers for Disease Control, 2022). With Riley Children's Health network on IUPUI's campus, Skills on Wheels has access to this immensely helpful community partner, allowing for connections to licensed occupational therapists, physicians, volunteers, and participants. Riley Children's Hospital is ranked among the top hospitals in the United States and in 2020 had almost 18,000 admissions for pediatric services in 2020 (Riley Children's Health, 2023). The nature of this university-affiliated program has allowed for increased access to surrounding resources and has contributed to the success of Skills on Wheels at IUPUI. As for the program itself, Skills on Wheels IUPUI began in 2021 with 4 participants, 13 participants in 2022, and an estimate of 20-30 participants for the upcoming year in 2023. For this year, 2023, the program currently has a total of 38 active volunteers, which is expected to increase. Participants include children aged 8-17 years old and often are recruited from Riley Children's Health services, although participants have been recruited from various recruitment efforts. Additionally, participants reside in the Greater

Indianapolis area and have a variety of diagnoses. Some diagnoses include: spinal cord injury, spina bifida, amputation, paralysis, mitochondrial disease, and more. Volunteers are typically occupational or physical therapy students at IUPUI, but this has also expanded to undergraduate students and students from surrounding universities. Volunteers assist with program development and those heavily involved with administration efforts as well as research assistants have paid positions. Skills on Wheels IUPUI has access to many community resources and is expanding rapidly, and program demographics will continue developing.

The second community site this capstone project includes is the Skills on Wheels program at Grand Valley State University (GVSU) in Grand Rapids, Michigan. This is where the research portion of the capstone was completed, as well as working with the program director, Lisa Kenyon, to complete such research efforts. In 2021, Grand Rapids was home to 197,416 people, and 9.2% of the population aged 65 and younger had a disability (United States Census Bureau, n.d.). Kent County includes Grand Rapids, Michigan, and reports having 11.2% of the population with a disability, and 7.2% of this population having an ambulatory disability (Brummel, 2020). This program is approaching its second year of operation in 2023, beginning in 2022 with 3 participants and 4 students to complete the training and research portion. The upcoming year, 2023, will include 4 participants and 4 students. This program operates differently than Skills on Wheels IUPUI as its trainers are not volunteers, but are physical therapy students completing research and training for a research project within a class. In this class, students are able to choose a research topic of their choice, such as SoW. Services are also in-home, and in the participant's community rather than meeting at one location. Originally, meeting at the participants' homes for training sessions were a stop-gap for preventing the spread of COVID-19. However, due to their success, the participants and students wished to continue



in-home services for the following year. Participants live in various Michigan counties and travel typically does not exceed one hour from GVSU for members. Some participant diagnoses include: Cerebral Palsy, Spina Bifida, genetic disease, spinal cord injuries, gross motor developmental delays, and motor skills disorders. Lisa Kenyon currently completes all administrative and organizational efforts for the program with adequate access to a variety of university and community resources.

## **Phase II: Needs Assessment Interview with Site**

After conducting a community and service profile, a formal needs assessment interview was conducted with program director, Dr. Tony Chase, to further understand the needs of the site and establish roles as a doctoral occupational therapy student. This interview lasted about 30 minutes and was conducted over video call. To clarify, an informal needs assessment interview was conducted prior to this interview when the site was originally established. Thus, questions for this formal interview were aimed at follow-up questions, updated goals, and identifying client needs. For a list of interview questions for this interview, see Appendix A.

This interview solidified Tony Chase's goals for the program within the next few years: to have a model for establishing and solidifying partnerships to improve the dissemination process. As Skills on Wheels continues to gain interest from other organizations, as noted previously, it is important to have an organized method for disseminating the program. Therefore, it was confirmed that an appropriate capstone project would include developing organizational systems for the program and creating the first stages of a program manual, as well as research with Crann Centre in Ireland. However, the research portion of this capstone project

was later updated to conduct research on SoW at Grand Valley State University (GVSU) to analyze the fidelity of programs that recently adopted Skills on Wheels.

## **Gap Analysis**

### ***What is known***

Skills on Wheels has already addressed a gap within healthcare: a lack of adequate wheelchair skills training for children using manual wheelchairs. Without the confidence and skills required to navigate one's environment, mobility is highly limited. Limited mobility may result in decreased participation in occupations such as Activities of Daily Living (ADLs), Instrumental Activities of Daily Living (IADLs), play, community mobility, education, social participation, and much more . In addition, children may experience decreased confidence and fear of navigating unfamiliar or challenging environments (Guerette, Furumasu, & Tefft, 2013). Currently, there are wheelchair training programs available, but many require payment from the client or have only online options such as the Wheelchair Skills Program (Kirby et al., 2020), and Online Wheelchair Service Training Series (International Society of Wheelchair Professionals, 2021) . Unfortunately, many families are already burdened by the significant cost of healthcare and may not be able to afford additional resources for their children (Lee et al., 2022). Skills on Wheels aims to narrow these gaps by providing a free manual wheelchair training program for families in the Indianapolis area. Although, this gap is not just in Indianapolis, but is experienced universally. Thus, this capstone aims to fulfill the gap through creating a successful methodology to expand the program and implement the program at various locations. The areas of focus for this capstone include program development and research in order to develop a sustainable method for disseminating the program.

## **Problem Statement**

As previously discussed, there is a lack of free and efficient resources for children to learn manual wheelchair mobility skills, leading to decreased quality of life and participation in various occupations. By creating a method to disseminate Skills on Wheels and research current dissemination efforts, more children can be provided with the necessary tools to navigate the world safely and with confidence. Many communities would benefit from such a resource to provide for their manual wheelchair users. Occupational therapists can implement manual wheelchair training programs due to extended knowledge of disability & conditions, wheelchair properties, biomechanics, and client-centered practices.

### **Literature Review**

A literature review was conducted in order to explore current research on best wheelchair program dissemination methods to ensure program fidelity and success. This information was used to advance this Capstone project and determine the gap for wheelchair skills training needs.

### **Health Program Management: Fidelity and Dissemination**

#### **Implementation Science**

Implementation science is an emerging field defined as “the scientific study of methods to promote the systematic uptake of research findings and other EBPs (Evidence Based Practice) into routine practice, and, hence, to improve the quality and effectiveness of health services.” (Damschroder, et.al, 2015). Implementation science shares many characteristics with program management and is often used as a framework for dissemination, including upscaling and developmental efforts (Damschroder, et.al, 2015). Implementation science studies have become increasingly popular among the healthcare community, aiming to explore multidimensional factors that affect the quality of the intervention or program with consideration of complex

topics. Such topics aimed to be measured from a variety of methods and include: patient, provider, clinic, facility, organization, the broader community, and policy environment (Damschroder, et al., 2015). Within these factors, specific issues that are addressed may be: intervention fidelity, attitudes, dose, reach, feasibility, and others depending on the program's needs (Moore et al., 2015). Randomized control studies are not utilized as often in this setting as researchers tend to prefer a naturalistic setting and prefer qualitative designs to maintain the context (Damschroder, et.al, 2015). Thus, available research on best methods of health program adoption tends to be for a unique program, based on expert opinion, and often qualitative and subjective data that is difficult to apply. However, this emerging field is paving the way for increased research efforts and allows for the dissemination of important health interventions, leading to some of the most influential discoveries in history (Chaudoir, Dugan, & Barr (2013).

### **Implementation Frameworks**

Implementation Frameworks are based on implementation science theories and used as a guiding model for planning, executing, and evaluating outcomes for various implementation processes. Frameworks vary from theories and models because they “organize, explain, or describe information and the range and relationships between concepts...” (Moullin, 2020). Implementation frameworks are typically utilized for research and/or program development efforts. Implementation frameworks are also intended to be used throughout the entire process including prior to, during, and following the implementation in real-life scenarios (Moullin, 2020). There are multiple frameworks that exist, and the following table (**Table 1**) describes the frameworks that were located in this literature review:

<b>Implementation Frameworks</b>		
<b>Framework</b>	<b>Description</b>	<b>Source</b>

<i>(Enhanced)Replicating Effective Programs (REP)</i>	Created for the development of various HIV programs by the Center for Disease Control and Prevention (CDC). Evidence-based behavioral interventions aimed to reduce risky behaviors or encourage safer ones. Also used as a framework for building related programs.	Centers for Disease Control and Prevention. (2019). Replicating Effective Programs (REP). <a href="https://www.cdc.gov/hiv/research/interventionresearch/rep/index.html">https://www.cdc.gov/hiv/research/interventionresearch/rep/index.html</a>
<i>Theoretical Domains Framework (TDF)</i>	Examines sources of behavior including: psychological, physical, social, physical, reflective, & automatic which have an dynamic relationship with capability, opportunity, and motivation. This framework was developed by a collaboration between behavioral scientists and implementation researchers.	Atkins, L., Francis, J., Islam, R., O'Connor, D., Patey, A., Ivers, N., Foy, R., Duncan, E. M., Colquhoun, H., Grimshaw, J. M., Lawton, R., & Michie, S. (2017). A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. <i>Implementation science</i> : IS, 12(1), 77. <a href="https://doi.org/10.1186/s13012-017-0605-9">https://doi.org/10.1186/s13012-017-0605-9</a>
<i>Capability, Opportunity, Motivation (COM-B)</i>	Enhanced version of the Behavior Change Wheel, tested for reliability with inter-rater agreement of 88%. Model for understanding behavior in relationship to the context as result of an implementation effort.	Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. <i>Implementation science</i> : IS, 6, 42. <a href="https://doi.org/10.1186/1748-5908-6-42">https://doi.org/10.1186/1748-5908-6-42</a>
<i>Reach, Effectiveness, Adoption, Implementation, &amp; Maintenance (RE-AIM)</i>	Used within a variety of studies for healthcare program development. "Address the realist evaluation question of what intervention components are effective, with which implementation strategies, for whom, in what settings, how and why, and for how long. This contextualized evidence makes RE-AIM practical for replicating or adapting effective interventions in a way that will fit and be feasible for one's local delivery setting." (Holtrop et al., 2021).	Holtrop, J. S., Estabrooks, P. A., Gaglio, B., Harden, S. M., Kessler, R. S., King, D. K., Kwan, B. M., Ory, M. G., Rabin, B. A., Shelton, R. C., & Glasgow, R. E. (2021). Understanding and applying the RE-AIM framework: Clarifications and resources. <i>Journal of clinical and translational science</i> , 5(1), e126. <a href="https://doi.org/10.1017/cts.2021.789">https://doi.org/10.1017/cts.2021.789</a>

<i>The Consolidated Framework for Implementation Research (CFIR)</i>	Has been published in 300+ articles. “Well suited to guide rapid-cycle evaluation of the implementation of complex health care delivery interventions, because it provides a comprehensive framework to systematically identify factors that may emerge in various, multi-level contexts to influence implementation.” Looks at 5 domains: Intervention characteristics, inner setting, outer setting, characteristics of individuals involved that may influence implementation, and implementation process.	Keith, R.E., Crosson, J.C., O’Malley, A.S, Cromp, D., Taylor, E.F. (2017) Using the Consolidated Framework for Implementation Research (CFIR) to produce actionable findings: a rapid-cycle evaluation approach to improving implementation. <i>Implementation Sci</i> 12, 15 <a href="https://doi.org/10.1186/s13012-017-0550-7">https://doi.org/10.1186/s13012-017-0550-7</a>
<i>Exploration, Preparation, Implementation, Sustainment (EPIS)</i>	Acknowledges dynamics of implementation by defining inner context, outer context, bridging, and innovation factors that influence or are influenced by an implementation effort. It goes through four phases: Exploration, Preparation, Implementation, and Sustainment.	Moullin, J.C., Dickson, K.S., Stadnick, Rabin, B., & Aarons. G. (2019). Systematic review of the Exploration, Preparation, Implementation, Sustainment (EPIS) framework. <i>Implementation Sci</i> 14, 1. <a href="https://doi.org/10.1186/s13012-018-0842-6">https://doi.org/10.1186/s13012-018-0842-6</a>

**Table 1.** Implementation Frameworks

### Selecting a Framework

Implementation frameworks tend to develop from expert opinion from a variety of professionals in related fields, and then used in real life scenarios to provide further data on the successes and barriers of that framework(s) for the context in which it was used. When selecting a framework, it is important to review current evidence available for each framework. One example is a randomized control study conducted by Kilbourne et al., (2015), where seven community-based mental health and primary care clinics were randomized to receive two different implementation frameworks; the Replicating Effective Programs versus the updated version of the CDC’s framework; Enhanced Replicating Effective Programs. Results focused on participant-related outcomes indicated on the Internal State Scale (ISS), the Patient Health

Questionnaire 9-item survey (PHQ-9), World Health Organization Disability Adjustment Scale (WHO-DAS), and Health-related quality of life (SF-12). Enhanced REP was not associated with improved mental or physical health-related quality of life, reduced functional impairment, manic symptom severity, or greater likelihood of depression remission at 24 months after adjusting for participant factors. Although these studies tend to be specific to a unique program, the quantitative and qualitative data is still applicable and provides further insight.

Another tool that may be utilized to select a framework is the Theory, Model, and Framework Comparison and Selection Tool (T-CaST), which guides the user through a series of questions related to the appropriateness of the model selected. In a study by Birken et. al (2018), this tool was assessed by 19 researchers and 18 practitioners to interpret usability, testability, applicability, and familiarity. This was interpreted using a list of specific criteria of 25 items related to the previously listed qualities. Results of cognitive and semi-structured interviews concluded that the tool is user-friendly and can effectively assist scientists and practitioners in selecting an appropriate framework for implementation projects.

### **Fidelity Assessments**

Fidelity is an important factor of implementation science that should be evaluated with program dissemination, yet can sometimes be overlooked with some implementation frameworks (Kilbourne et al., 2015). Fidelity is currently assessed in a multitude of ways and currently lacks a structured system for outcome measurement (Moore et al., 2015). While there are a vast array of methods available for assessing fidelity, constructs hypothesized to affect implementation identifiable measures are not agreed upon by researchers (Chaudoir, Dugan, & Barri, 2013). In addition, when looking at fidelity measurements, many program development initiatives that only measure one factor as this is typically easier to create outcome measures for as noted in the

systematic review by Chaudoir, Dugan, & Barr (2013). Although studies may appear more organized and a higher quality level of evidence as they attempt to use the easiest outcome measure, it ignores the true complexities of implementation science. The systemic review (Chaudoir, Dugan, & Barr, 2013) sought to identify noted gaps and assess constructs that predict the implementation of evidence-based health innovations within 125 articles that met the inclusion criteria. The inclusion criteria is as follows: written in English, and validated or utilized at least one measure designed to quantitatively assess a construct hypothesized to predict an implementation science related outcome. The review resulted in finding 62 different measures utilized to assess multi-level constructs including organizational, structural, provider, patient, and innovation-level factors. While it is promising there are so many available measures, it is also difficult for the implementation team to determine best practices for their goals. Results also indicate that organization, provider, and innovation-level constructs have the greatest number of measures available for use, while structural and patient-level constructs have the least. There are very few measures that consider criterion validity or reliable association with an implementation outcome. Only 15.6% of studies examined fidelity, adoption was measured 90.1% of the time, and no studies exemplified implementation cost, penetration, or sustainability. This study also suggests that implementation outcomes that should be assessed include: adoption, fidelity, implementation cost, penetration, and sustainability.

Another study by Hoekstra et al. (2017) used longitudinal data from Rehabilitation, Sports and Exercise (RSE) program, in Dutch rehabilitation care to assess fidelity of the program when replicated to 17 new locations. To assess fidelity, this program did not use one of the 62 measures as mentioned in the previous study and created an annual survey, which was taken over a span of three years and contained questions about the extent to which the core components of



the RSE program were implemented in the organization. Qualitative and quantitative data were extracted from these interviews and found that those with higher fidelity tended to have increased support from program directors/increased communication, had less staff, started earlier, and implemented the program in a structured manner.

A randomized control trial by Beidas, Edmunds, & Kendall (2012) examined fidelity of a Cognitive Behavioral Therapy (CBT) workshop for pediatric anxiety for implementing the program as a webinar workshop versus as an augmented workshop. For this program, fidelity was defined as the “utilization of the procedures of a protocol in the treatment of a client” (Beidas, Edmunds, & Kendall, 2012). Thirty-four participants engaged in the online workshop, called the “Coping Cat” program, and forty participants completed the augmented program. Measures included clinician demographics and attitudes, training satisfaction, a 20-item knowledge test pre and post training, and an Adherence and Skill Checklist. The Adherence and Skill Checklist was aimed to measure therapist fidelity to CBT for child anxiety. The checklist calculated fidelity by coding the presence of six core CBT competencies on a scale of 0 to 6, with the higher number being better adherence. Fidelity was also assessed via Likert scale on level of competence of trainers by a blind coder. Findings of fidelity resulted in .98 intraclass correlation and .92 intraclass correlation which is outstanding. In addition, both trainer and participant knowledge and skill increased. It is an important finding to consider that after each hour of consultation after training, therapist adherence improved by .4 point and skill by .3 point, which is a sizable return on investment and suggests consultation in addition to training is important for a flourishing program. These findings suggest that a relatively limited dosage of training, approximately 13 hours, can result in meaningful behavior change for therapists when consultation is included.

Fidelity with wheelchair skill training programs is not often assessed. Many wheelchair skill training programs tend to focus more on the outcome measurements such as wheelchair skills performance measures rather than the program structure itself (Giesbrecht et al., 2021), (Worobey et al., 2016), (Kirby et al., 2015). Few studies include review of the program management, and if such factors are addressed they are often missing information. For example, one randomized control study by Best, Miller, & Routhier (2018) was conducted to determine the feasibility of a peer-led (age 19+) older adults wheelchair skills training program (age 50+) while evaluating process, resource, management, and safety issues. Both the control and intervention group were peer-led with at least five years of wheelchair experience that were trained in a two-day, fifteen hour workshop. The control group, iWheel, received six (~weekly) hour and a half didactic sessions of information about using a wheelchair in the community led by a healthcare professional. Discussion, questions, topics such as transportation, maintenance, physical activity and nutrition, accessibility in the community were addressed and wheelchair skills were not practiced. The intervention group, WheelSeeU, incorporated tasks known to challenge wheelchair use self-efficacy, but each session was individualized according to client-centered goals. Patients also had homework on integrating new skills. While wheelchair training skills were the focus outcome of this study, this is one of the few studies that also measured program management outcomes such as: participant processing time, administration of study protocol, and fidelity. Administration was guided by a protocol checklist, which was monitored and recorded by the support-trainer and control group trainer. Fidelity here was defined as “adherent and competent delivery of the intervention” and was evaluated using a “study-specific WheelSeeU Administrator Rating Form that outlined important details and components of the WheelSeeU intervention to be completed by the peer-trainer and the

support-trainer in a checklist (e.g., support-trainer demonstrated proper application of the spotter strap, peer-trainer helped to develop new goals and reviewed existing goals with participants) ” (Best, Miller, & Routhier, 2018). Unfortunately, this study did not grant access to the contents of this Administrator Rating Form. The study did, however, report that this form was completed at least one time per participant pair during the WheelSeeU intervention and based on this form, fidelity was deemed successful. However, this study leaves out key information regarding their fidelity measurement.

It can be concluded from such studies and many more that fidelity is assessed in a variety of ways, with many programs struggling to find a fidelity measurement that can directly correlate implementation outcomes with specific factors. It would also benefit wheelchair skills training programs to evaluate program development factors in addition to wheelchair skills outcomes.

### **Guiding Theory and Model**

One of the guiding theories for this capstone project is the Adult Learning Theory, which pairs with the andragogy model (Cercione, K. 2008). The Adult Learning Theory imposes that adult learners are individuals that bring their personal experiences into the learning environment, with situations that encompass the adult life that may interfere with learning. Some examples of such personal experiences include financial, family, and career circumstances. This model was used in order to effectively collaborate with the large group of adult learners that create SoW IUPUI and SoW GVSU. A learner-centered approach for this population is appropriate as adults are intrinsically motivated (Cercione, K. 2008). Therefore, when applying this theory to the capstone project as it entails collaboration with other adult learners, one must use approaches relative to what is most appropriate to foster healthy relationships and learning. In addition, this theory was used in order to conduct effective research, especially for the recruitment process.

For example, as this theory states that adults are intrinsically motivated, recruitment efforts must approach adults in this manner.

Another model that was used throughout this capstone project is an implementation and fidelity framework that was previously described in the literature review; The Consolidated Framework for Implementation Research (CFIR). This framework was utilized in the creation of semi-structured interview questions, data collection, and was used for the data analysis process. The CFIR recognizes processes of program implementation in relation to fidelity including five domains and multiple constructs, as noted in Appendix B.

### **Capstone Project Plan and Process**

#### **Goals and Objectives**

The capstone project plan was developed through the Student Learning Plan. The Student Learning Plan is a document clarifying student objectives and goals for the capstone project, and is confirmed between the capstone student and all proper faculty. This document not only solidifies objectives and goals which guide the capstone project, but upholds the student to the highest standards through self-directed learning. The information from this Student Learning Plan is provided in the following tables, **Table 2** and **Table 3**.

**Table 2:** Student learning objectives are the overarching guiding standards.

<b>Student Learning Objective #1</b>	The student will adhere to research protocols and increase understanding of the research and evaluation processes to protect the justice, confidentiality, and privacy of the subjects.
<b>Student Learning Objective #2</b>	The student will enhance critical reasoning skills when analyzing, interpreting, and summarizing research data in order to successfully fit the needs of the site.
<b>Student Learning Objective #3</b>	The student will demonstrate informed decision-making and self-directedness throughout the capstone experience for the greater good of the program's development, management, and dissemination efforts.

**Table 3.** Project goals required for completing the capstone project. Objectives refer to specific tasks needed to achieve the related project goal.

<b>Project Goal</b>	<b>Objective #1</b>	<b>Objective #2</b>	<b>Objective #3</b>	<b>Objective #4</b>
1) The student will assist with the beginning stages of creating a manual, such as the completion of a manual outline, to enhance the program's dissemination efforts throughout the 14 capstone week.	The student will research evidence-based practices regarding wheelchair programs, wheelchair program manuals, and reflect on best practices / organizational methods.	The student will collaborate with various students and faculty to further understand their individual roles within the Skills on Wheels program, and organize and summarize these roles respectively.	The student will gain and organize a general understanding of the program timeline including supplies, events, trainings, etc. for each academic school year.	The student will create a general outline for the the Skills on Wheels program manual that accurately reflects the goal of dissemination, is evidence-based, and is easily completed by future individuals.
2) The student will prepare and execute the research procedure to gain increased knowledge of program management and fidelity of Skills on Wheels in Grand Rapids, MI by 12 weeks.	The student will increase understanding of research procedures such as: analyzing qualitative data, Dedoose training, and completing semi-structured interviews through research and collaboration with site mentor.	The student will prepare semi-structured interview questions for the initial interview by 3 weeks, conduct the initial interview by 5 weeks, and transcribe the initial interview.	The student will prepare semi-structured interview questions for the follow-up interviews by 6 weeks, conduct the interviews by 10 weeks, and transcribe the follow-up interviews.	X
3) The student will analyze and interpret the research data by week 14 to understand program fidelity, successes, barriers,	The data will be inputted in Dedoose to be coded and generalized by week 13 to complete analyzation	The data will be interpreted based on the needs of the Skills on Wheels Program and reported in a manner to gain understanding of	X	X

outcomes, and general program management abilities; data will be generalized to interpret information that is beneficial for enhancing the Skills on Wheels program.	of the research data.	best practices for manual wheelchair skills programs.		
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### **Evaluation Plan**

In addition to establishing goals and objectives for the capstone project, an evaluation plan was created to determine project success and ensure continuous evaluation throughout the capstone process. Project success includes principles such as usability, efficiency, sustainability, effectiveness, and impact of the project. As confirmed prior to beginning the capstone experience, an outline for the SoW manual was to be created in a manner that is easily transferable to oncoming students and staff for later completion. Two SoW research assistants have been appointed to complete assigned portions on the manual. Due to the nature of this project, this would not warrant the immediate ability to use and disseminate the manual. Thus, there is no effective evaluation method that could measure the use of the manual due to its intended incompleteness. However, the feasibility and sustainability of this project allows for future evaluation of the manual. Self-evaluation of the manual outline was completed by attending a SoW program session to ensure the manual encompasses all aspects of the program through active observation, involvement, and collaboration. After attending this session, there were no required updates. However, there will continue to be edits by the research assistants, Dr.Chase, and the capstone students until the manual is finalized and ready for dissemination.

Evaluation of the research portion will be completed through ensuring quality of research, providing qualitative data results, analysis, and interpretation of results. Such processes

to ensure research quality include completing all necessary human subject research training, submission to the Indiana University Institutional Review Board (IRB), continuing research regarding interview and data analysis methods, a mock interview, using an encrypted and specialized research analysis platform, and application of results to SoW. Evaluation of research through qualitative data results are provided in the Capstone Project Evaluation section.

### **Capstone Project Implementation**

The implementation process of this capstone project began with various preparation tasks required for success of such projects. Additionally, various program development tasks were completed to assist SoW with their third year of running SoW and for general program management and development assistance. This capstone project has been divided into the following three categories in order to better describe implementation: The program manual, dissemination research, and program management & development tasks.

#### **Component 1: Dissemination Research**

Research was conducted to gain further knowledge of program fidelity between two SoW programs, IUPUI and GVSU. The goal of this research was to determine how differences in program fidelity between these sites may lead to various program outcomes. This is especially relevant as SoW continues to disseminate the program to various universities and facilities. The research question was: “What are the differences between the IUPUI SoW program and the GVSU SoW program based on fidelity principles, and how do these differences contribute to various program outcomes?” This portion of the capstone project also directly relates to the creation of the program manual outline as both projects aim to address program fidelity with dissemination processes.

This research project included conducting four semi-structured qualitative interviews with former GVSU SoW participants and one of their parents per child, which required various preparation tactics to ensure quality of research. Such preparation tasks included review of literature on best methods for qualitative semi-structured interviews and techniques for interacting with the target population. This population included disabled pediatric individuals, adult caregivers, and parents of children with disabilities. This information was then utilized to update and enhance the interview questions from the original IRB submission to increase the success of the interviews. Additionally, self-guided training was completed on proper use of the data analysis software, Dedoose. This included watching training videos, conducting a mock interview, and completing a mock research study in Dedoose. The mock interview was completed with a SoW member who had previous experience with semi-structured interviews in a similar population. Once this was completed with confidence, it was time to begin the recruitment process. There were six total individuals that were eligible for this research. Out of those six, three parents communicated their interest, and their child's interest, in the study. All six participants were interested, but only two followed through with participation for unspecified reasons. Thus, there were four total participants in this study, including two parent and child pairs. While recruitment processes were occurring, an informal qualitative interview was conducted with the program director of SoW GVSU, Lisa Kenyon. This was completed to obtain additional information regarding program structure components of the GVSU program. This information was used to compare program characteristics of SoW GVSU and IUPUI based on fidelity model principles, and can be referred to in Appendix D. Following formal analysis of this information, the main differences in program structure were identified and listed in Appendix C. Following review of consent with both the child and adult participants, initial



interviews were conducted. These interviews were transcribed manually, then coded within the data analysis software. Inter-rater cross-checking was completed with all coding to increase reliability. This was completed by Madison Loeser, SoW IUPUI staff member who has experience in semi-structured qualitative interviews, Dedoose, was conducting a similar research project.

Prior to completing analysis of the data, it was determined that a site visit to SoW GVSU would enhance the analysis process by providing context to qualitative data. This was completed over several days. Observation of a SoW GVSU participant for one in-home wheelchair skills training session was completed. This participant was not included in the research study in order to avoid potential bias during analysis. Experiencing the program in person was an extremely helpful tool during data analysis, and provided context and meaning to excerpts. On days that SoW GVSU was not being observed, the researcher and capstone student was able to attend Power Mobility Project sessions, where children using manual wheelchairs practiced using a power wheelchair.

Finally, analysis of the research was conducted through Dedoose. Results can be found in the Capstone Project Evaluation section.

## **Component 2: Program Management & Development Tasks**

There were various tasks completed to assist SoW with program management and development initiatives. One example was being an active member in the SoW social media team. Related tasks included consistent creation of social media content, collaborating with other SoW members of the social media team in bi-weekly meetings, and researching information required for social media posts. Such efforts led to a greater understanding of many concepts related to mobility impairments and wheelchair use, as well as opportunities to collaborate with

other individuals in the community. Another duty contributing to program development included organizing tasks related to representing SoW in the American Occupational Therapy Association Conference. Tasks included organizing booth setup, collaborating with faculty and SoW capstone students, and creating a flyer that describes SoW capstone student's roles to provide to IU Occupational Therapy Alumni. Other tasks included creating the necessary materials required for standardizing the Wheelchair Skills Test in the upcoming program year of SoW and ensuring the correct measurements of each skill set. This included a thorough review of the Wheelchair Skills Program Manual, two trips to the location of the training sessions, and taking measurements to practice accurate setup.

It was then identified that an increase in various organizational efforts would benefit the program as well as increase the success of the program manual, described in Component 3. The first organizational effort that was determined as beneficial included assigning members to specific roles. Originally, the SoW staff had unspecified roles and fulfilled various tasks as needed, but did not have structured responsibilities. Due to the number of SoW staff increasing and still continuing to do so, it was agreed upon that organized titles and responsibilities would contribute to program and manual success. Assigning roles would assist future cohorts in transitioning into and out of roles, allow students to sign up for positions that best match their interests, increase productivity, encourage efficient communication, clarify responsibilities, and provide future members with a mentor who was previously fulfilling their role. The first task to complete this transition was to conduct informal qualitative interviews with each SoW staff member to further understand their current roles and responsibilities in the program, and their personal feelings regarding the structural change. Immediately following the interviews, 93% (14/15) of SoW members were in high support of the structural change. After providing

additional information to one member, this number changed to 100% (15/15) of SoW members in support of this change. Then, meetings were conducted with program director Dr.Chase and two other SoW staff members, Rachel Heminger and Maria Stiens, to create a document of required roles, their descriptions, and responsibilities. Current staff members were assigned to such roles in a staff meeting, which was successfully implemented.

Lastly, participation in the third iteration of the SoW program as a spotter and staff member was completed, and will continue to do so for one more training session. This included assistance with volunteer training sessions, ensuring safe practices during sessions, providing assistance to volunteers, set-up and tear down, and being the main spotter for a child participant.

### **Component 3: The Program Manual**

The purpose of the program manual is to assist SoW in their dissemination efforts, allowing future individuals to adopt SoW with a concise guide. The manual will also enhance organizational efforts for future iterations of the program. It was determined at the beginning of the capstone experience that only the outline of the project manual would be completed by the capstone student. Prior to creating the actual manual outline, a review of available literature was conducted to further understand the components and organizational methods of pediatric wheelchair program manuals. This information was then used to formulate an outline of the SoW program manual, which was reviewed and confirmed in a meeting by Dr.Chase, SoW program director. Although the program manual outline was already completed, there was additional time that allowed for filling in the content of the manual. In order to do so, a thorough review of SoW program documentation was completed. Many documents included helpful information for creating the manual and were utilized to create content. Finally, two SoW research assistants were appointed as co-authors of the manual, and will be completing designated portions of the

manual in order to assist with work load. The manual will continue to be created throughout Summer 2023, and is predicted to be finalized by Fall 2023.

### **Capstone Project Evaluation**

The capstone project evaluation was completed through research analysis and determining key findings of research results. The following results demonstrate these key findings gathered from the qualitative semi-structured interviews. Detailed results, analysis, discussion, and implications are planned to be further described in a published manuscript in Summer of 2023.

#### ***Overall Major Themes:***

- 1) All children experienced an increased ability to perform various wheelchair skills. Data demonstrates that one child gained more wheelchair skills, and also gained more skills in various terrains and environments.
- 2) All children experienced an increase in independence and confidence when operating their wheelchairs.
- 3) The student trainers were perceived as competent, trustworthy, and safe with the program director present.
- 4) There was a 100% positive association with trainer-participant relationship. The children viewed training sessions as social engagement with the trainers.
- 5) Family presence at training sessions provided support and comfort for children.  
Additionally, parents gained increased knowledge in wheelchair mobility and safety that was applicable to daily life.
- 6) Data shows that the parent and child pair who practiced wheelchair skills in community settings and used the manual wheelchair more frequently had more positive codes and

potentially experienced more impactful outcomes from the program. This is compared to the family who completed all training sessions in-home and uses their manual wheelchair significantly less often.

- 7) Learning to lean the correct direction when going uphill or downhill was perceived by all participants as being extremely helpful.
- 8) House mobility was improved with all children.
- 9) Parents benefitted in various ways from collaborating with the program director and asking questions during sessions.
- 10) Wheelchair skills and confidence are still a work in progress for the children, but have made great gains due to the program.

### **Capstone Discussion and Impact**

This capstone project was successful in its goal of assisting the SoW program with dissemination efforts. In addition, the results of this capstone project allowed for increased program structure organization, increased collaboration with other SoW programs, and an increased understanding of fidelity with SoW dissemination. This was achieved through creating a program manual outline, conducting research with SoW GVSU, and various program development efforts. The impact of this project directly reaches the SoW program and allows more universities and facilities to adopt the program. However, this is not the end result of the capstone project. The importance of this project is the impact it will have on the SoW participants and their families. With more SoW programs being adopted, this means that more children will be able to learn the necessary wheelchair skills they need to navigate the world with confidence. From the research results, we found that even with variations of the program, children are still gaining wheelchair skills, confidence, and much more. Thus, it is the hope of

the capstone student that this project reaches these beloved families and finds them the way SoW IUPUI and GVSU have done so.

### ***Sustainability Plan***

This capstone project was developed with the goal of maintaining sustainability for the SoW program. The program manual is intended to be completed this upcoming Fall, 2023, by the capstone student and two SoW research assistants. The intention of this manual is to be used for many years to come with updates as needed, and is therefore sustainable. The organizational efforts completed with the program are also intended to remain for the entirety of the SoW program, again, with updates as needed. Creating designated roles for SoW staff is especially sustainable as new staff members continue to join SoW each year, and organized roles will continue impacting the program and its staff in a positive manner. Finally, the research results allowed for suggestions to improve program structure, various indications for future program iterations, and recommendations for SoW program dissemination. These results are sustainable as they offer recommendations to enhance the SoW program and dissemination efforts.

### **Conclusion**

According to DeJuliis & Bednarski (2019), in order to have a successful capstone experience, you must follow these guidelines: practice in an area of passion, be consistent with the educational program's curriculum, have evidence to support the need, be client-centered, and produce effective occupational therapy practitioners. It is with no doubt that this capstone experience achieved these guidelines. Targeted areas of practice in this capstone experience included program development, research skills, administration, and leadership. These targeted areas of practice were achieved in addition to gained skills such as collaboration, communication, self-directed learning, organizational skills, critical thinking skills, and time

management. All Student Learning Objectives were achieved in this capstone experience with exceeding standards such as developing content of the program manual in addition to the outline, and creating a research manuscript. It is at the discretion of the capstone student that this experience developed crucial career-related skills as an occupational therapist, researcher, and potential program manager.

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## **Appendix A**

Interview questions asked during the formal needs assessment interview.

- 1) What are your goals for the program over the next few months? One year?
- 2) In what areas do you currently feel successful in the program?
- 3) What challenges do you currently face in the program?
- 4) Do you believe our current goals for my capstone project accurately reflect the direction of the program?

## Appendix B

### The Consolidated Framework for Implementation Research (CFIR) 5 main domains and constructs (Keith et al., 2017)

#### Intervention Characteristics

- Intervention Source
- Evidence strength and quality
- Relative advantage
- Adaptability
- Trialability
- Complexity
- Design quality and packaging
- Cost

#### Inner Setting

- Structural characteristics
- Networks and communications
- Culture
- Implementation climate
  - i) Tension for change
  - ii) Compatibility
  - iii) Relative priority
  - iv) Organizational incentives and rewards
  - v) Goals and Feedback
  - vi) Learning climate
- Readiness for implementation
  - i) Leadership engagement
  - ii) Available resources
  - iii) Access to information and knowledge

#### Outer Setting

- Patient needs and resources
- Cosmopolitanism
- Peer Pressure
- External policies and incentives
- Available resources
- Access to information and knowledge
- Leadership engagement



#### Characteristics of Individuals that may influence intervention

- Knowledge and beliefs about the intervention
- Self-Efficacy
- Individual stage of change
- Individual identification with organization
- Ambiguity, intellectual ability, motivation, values, competence, capacity, innovativeness, tenure, and learning style

#### Implementation Process

- Planning
- Engaging
- Executing
- Reflection and evaluating

## Appendix C

Differences in program structure between SoW IUPUI and SoW GVSU noted following interview with program director of SoW GVSU.

- i. Training sessions location
- ii. Socialization portion for adults and kids, family involvement, & play
- iii. Supervision during sessions
- iv. Amount of training for students
- v. Assessments
- vi. Volunteer/student and participant recruitment
- vii. Learning climate for students/volunteers
- viii. Volunteer/student Characteristics
- ix. Client Autonomy

### Appendix D

A chart comparing the program structural components of SoW IUPUI and SoW GVSU. Such program components were decided based on the CFIR model.

	<b>Skills on Wheels Indiana University Purdue University Indianapolis (IUPUI)</b>	<b>Skills on Wheels Grand Valley State University (GVSU)</b>
<b>Intervention Characteristics</b>		
Years active	2 completed, 1 upcoming (2021, 2022, 2023, +)	1 complete, 1 upcoming (2022, 2023, +)
Number of Participants	Year 1: three participants Year 2: thirteen participants Year 3: twenty-one participants	Year 1: three participants Year 2: six participants (four current, two planned)
Total hours of wheelchair skills training	9 hours	4 to 5 hours
Training session frequency	1x/week for 5 weeks  2 of those weeks used for assessments, 3 used for training.	1x/week for 5 to 6 weeks  1 or 2 of those sessions, depending on participant preference, are used for assessments. 4 used for training.
Training session length	3 hours each	1 hour each
Training sessions location	IUPUI campus gym with separate rooms for volunteers and families.  1 community training session outside at the Indianapolis Canal Walk.	In-home  In various community settings and environments of participant's choice.
Student to participant ratio (not including supervision)	2-3:1, with one main trainer	2:1
Supervision	Multiple licensed OT's, ATP's, & faculty with experience in WCS; indirect supervision	Program director; direct supervision

Volunteer Reliability/Consistency	The same students sometimes train the same participants.	The same students typically train the same participants.
Participant Autonomy	<p>Participants choose which WCS they learn.</p> <p>Family chooses when they want to observe and learn skills &amp; which skills.</p>	<p>Participants choose the environment in which they learn WCS in (community, in-home, at GVSU).</p> <p>Participants choose which WCS they learn.</p> <p>Family chooses when they want to observe and learn skills &amp; which skills</p> <p>Participants may choose if post-assessments are completed immediately following the 4th sessions or to schedule for an additional session based on fatigue level</p> <p>Participants may schedule sessions based on preference.</p>
Caregiver Education	<p>Families can ask questions during training sessions and practice skills per request. Take home education materials are provided each training session.</p> <p>Caregiver Corner: private space for caregivers to relax &amp; gain education on various related topics.</p> <p>Youth Corner: private space for siblings to enjoy and receive age-appropriate education on various related topics.</p>	Families can ask questions during training sessions and practice skills per request.

Implementation Process		
Volunteer/Student recruitment	<ul style="list-style-type: none"> <li>• Social media posts</li> <li>• Flyers/Posters in universities</li> <li>• Word of mouth with students, faculty, and licensed OT's</li> </ul>	<ul style="list-style-type: none"> <li>• Physical therapy students rank faculty-led research opportunities as a research project for a class. Results are chosen via ranking.</li> <li>• Students are graded on their research project and supervised by the faculty member/ SoW program director.</li> </ul>
Participant recruitment	<ul style="list-style-type: none"> <li>• Social media posts</li> <li>• Flyers at Riley Children's Hospital and various clinics</li> <li>• Emails to previous participants</li> <li>• Word of mouth through therapists and physicians</li> </ul>	<ul style="list-style-type: none"> <li>• 1 participant from published clinical trial</li> <li>• 3 participants from standardized patient program at GVSU for student learning</li> </ul>
Research	Designated students conduct research through projects or through a paid position as research assistant. A faculty member is supervising and assisting students completing research. (~10 students & faculty)	All students assist with program research as part of their class.
Assessments	<p>WHOM-YP, 6min Push Test, WheelConPed, PEM-CY, Wheelchair Skills Test, &amp; ROM. Volunteers conduct all assessments with indirect supervision and prior training. Students analyze data with direct supervision from the Program Director.</p> <p>Eligibility Assessment: Licensed OT completes evaluation. ROM, strength testing, informal cognitive assessment, push test 50ft, and "get to know you" questions.</p>	<p>WST-Q, WheelCon-Ped, COPM, pre and post qualitative interview &amp; SDQ. Program Director conducts all assessments while students observe.</p> <p>Students analyze data from some assessments (Canadian Occupational Performance Measure and Wheelchair Skills Test-Questionnaire scores)</p> <p>Eligibility Assessment: Program Director and licensed PT completes safety evaluation. Parent report must confirm child</p>

		<p>is able to follow simple instructions, child is under 18 for duration of study, at least one parent must be able to converse in English, and manual wheelchair use over 25% of the time.</p>
<p>Volunteer Training &amp; Competency</p>	<p>Volunteers complete a 2-3 hour training session. Wheelchair skills from the WST are practiced.</p> <p>Volunteers practice performing these skills and coaching on these skills with indirect supervision, able to ask questions as needed. No current competency requirement. The volunteers are also trained on how to conduct assessments during this training session.</p>	<p>Volunteers are assigned reading and videos to watch from Wheelchair Skills Program website. Students must pass competency as observed by the program director with two days of competency sessions. The first session is practicing and coaching WCS. The next session, students complete a case study role play and must demonstrate appropriate interventions including WCS training; students switch roles of student and participant.</p> <p>Students must plan interventions prior to completing intervention, reviewed by program director and discussed in person before training session. Interventions are based off of goals directly from participant as well as goals established by student for client.</p> <p>Students then reflect on each intervention session and discuss with program director immediately following session.</p> <p>This model is based off the Hypothesis Oriented Pediatric Focused Algorithm (HOP-FA).</p> <p>Past students train and guide new students with Lisa supervising.</p>

Inner Setting		
Program Communication Method	<ul style="list-style-type: none"> <li>• Weekly meetings (in person and Zoom)</li> <li>• Periodic meetings for specialized sub-committees (social media, research, etc.)</li> <li>• Instant message group chat</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly meetings (in person and Zoom)</li> <li>• In person discussions immediately following and prior to training sessions</li> <li>• Additional meetings as needed</li> </ul>
Learning Climate & Leadership Engagement	<ul style="list-style-type: none"> <li>• Volunteers perform interventions under indirect supervision in controlled environment and provided guidance by professionals.</li> <li>• Able to pause interventions to ask questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical education model is used.</li> <li>• Student perform interventions under direct supervision and provided with guidance and feedback from professor/program director.</li> <li>• Able to ask questions in real-time during interventions.</li> </ul>
Volunteer/Student Involvement	<ul style="list-style-type: none"> <li>• Training Sessions</li> <li>• Program management</li> <li>• Research</li> </ul>	<ul style="list-style-type: none"> <li>• Training Sessions</li> <li>• Research</li> </ul>
Outer Setting		
Social Participation	<ul style="list-style-type: none"> <li>• Participants interact during program training sessions.</li> <li>• Families of participants interact during program training dates.</li> <li>• 30 minute coordinated group activities at end of each session</li> <li>• Free extracurricular events for participants and families.</li> <li>• Caregiver Corner and Youth Corner encourage interaction between family members of participant.</li> </ul>	Participants do not interact per breach of GVSU's Institutional Review Board (IRB) protocol.
Home Program	<p>Participants and families are encouraged to work on WCS between program sessions.</p> <p>Participants are provided with a home exercise program for upper extremity range of motion (ROM) and strength.</p> <p>Participants receive education handouts.</p>	Participants and families are encouraged to work on WCS between program sessions

Program Accessibility	Requires travel for participant	Does not require travel for participant
Access to Resources	<ul style="list-style-type: none"> <li>Experienced faculty and staff in relative areas.</li> <li>External funding</li> </ul>	<ul style="list-style-type: none"> <li>Experienced faculty and staff in relative areas.</li> <li>Community groups and</li> <li>Parent Facebook groups</li> <li>Research</li> <li>Standardized Patient Program</li> </ul>

Characteristics of Individuals that may influence intervention		
Volunteer/Student Characteristics	<ul style="list-style-type: none"> <li>Mainly OT and PT students of IUPUI. Also includes students from surrounding universities (UIndy), and undergraduate students with relative field interests.</li> <li>Volunteers and paid positions for those involved with administration and research</li> </ul>	<ul style="list-style-type: none"> <li>PT research students</li> <li>Completed as part of research class.</li> </ul>
Program Director Characteristics	<p>Tony Chase:</p> <ul style="list-style-type: none"> <li>M.S. in Organic Chemistry at Purdue University 2012</li> <li>PhD in Educational Psychology &amp; Research Methodology from Purdue University in 2016.</li> <li>Faculty at the School of Health &amp; Human Sciences at IUPUI</li> <li>Evaluation and Research Specialist at the STEM Education Innovation and Research Institute at IUPUI where he worked on research related to STEM Education, Educational Psychology, and Assessment.</li> <li>Assistant Professor for the Department of Occupational Therapy.</li> <li>Expert in research</li> </ul>	<p>Lisa Kenyon:</p> <ul style="list-style-type: none"> <li>DPT, pediatric physical therapist for 35 years</li> <li>PCS; Pediatric Clinical Specialist</li> <li>M.H.S. Masters of Health Sciences</li> <li>PhD</li> <li>B.S. Physical Therapy</li> <li>Evaluation and research specialist on mobility use in pediatric population, with a focus in power mobility</li> <li>Director of Power Mobility Project at GVSU</li> <li>Associate professor at Grand Valley State University for PT research courses</li> <li>Member of APTA, Pediatric &amp; Education Sections</li> <li>Member of American Academy of Cerebral Palsy &amp; Developmental Medicine</li> </ul>



	methods and assessment whose research in childhood disability and mobility.	
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