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# Use of a Logic Model to Develop an Innovative Hand Therapy Clinic to Provide Experiential Learning for Occupational Therapy Students

## Abstract

Occupational therapy (OT) students seek experiential learning opportunities to help them construct knowledge and meaning. Student clinics are increasing in prevalence as an effective means to engage in experiential learning. The student experiential learning clinic for hand therapy (SELC-HT) is a newly opened student clinic providing OT to under-insured individuals with upper extremity impairments. The SELC-HT used the student run free clinic (SRFC) logic model to systematically plan, implement, and evaluate its effectiveness. Planning started with evaluating the need and the context of the SELC-HT, allowing developers to state the long-term impacts of preparing students for future clinical practice, reintegrating patients without healthcare back to their roles, and contributing to the OT body of knowledge. Planning then progressed in a backward manner by first identifying measurable outcomes leading to these impacts. The output is data on the SELC-HT's reach, indicating the clinic is moving toward these outcomes. Development of the activities followed, which will produce the output and outcome data. Lastly inputs were identified to carry out the activities. Following this careful planning, the clinic opened by moving forward through the SRFC logic model. At the conclusion of the first semester, evaluation of the SELC-HT occurred by examining the output data and measurable outcomes. Program evaluation occurred throughout the semester to assess whether the planned components were carried out effectively. As outlined in the SRFC logic model, iterative changes were made to the SELC-HT, with new outcomes, outputs, activities, and inputs implemented in the following semester to continue moving toward the impacts.

## Keywords

Experiential learning, student clinics, student outcomes, logic model

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## Use of a Logic Model to Develop an Innovative Hand Therapy Clinic to Provide Experiential Learning for Occupational Therapy Students

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### ABSTRACT

Occupational therapy (OT) students seek experiential learning opportunities to help them construct knowledge and meaning. Student clinics are increasing in prevalence as an effective means to engage in experiential learning. The student experiential learning clinic for hand therapy (SELC-HT) is a newly opened student clinic providing OT to under-insured individuals with upper extremity impairments. The SELC-HT used the student run free clinic (SRFC) logic model to systematically plan, implement, and evaluate its effectiveness. Planning started with evaluating the need and the context of the SELC-HT, allowing developers to state the long-term impacts of preparing students for future clinical practice, reintegrating patients without healthcare back to their roles, and contributing to the OT body of knowledge. Planning then progressed in a backward manner by first identifying measurable outcomes leading to these impacts. The output is data on the SELC-HT's reach, indicating the clinic is moving toward these outcomes. Development of the activities followed, which will produce the output and outcome data. Lastly inputs were identified to carry out the activities. Following this careful planning, the clinic opened by moving forward through the SRFC logic model. At the conclusion of the first semester, evaluation of the SELC-HT occurred by examining the output data and measurable outcomes. Program evaluation occurred throughout the semester to assess whether the planned components were carried out effectively. As outlined in the SRFC logic model, iterative changes were made to the SELC-HT, with new outcomes, outputs, activities, and inputs implemented in the following semester to continue moving toward the impacts.

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Experiential learning emphasizes experience as the foundation for creating knowledge in adults by using real-life or hands-on opportunities to construct knowledge and meaning (Kolb et al., 2000; Yardley et al., 2012b). Experiential learning for healthcare students enhances concepts taught in the classroom (Smith & Crocker, 2017) by

providing opportunities for patient interactions (Yardley et al., 2012a). Occupational therapy (OT) curricula are using experiential learning to prepare students for future patient care (Coker, 2010; Doucet & Seale, 2012; Goldbach & Stella, 2017; Knecht-Sabres, 2010, 2013).

Healthcare professional programs are expanding the opportunity for experiential learning through the use of student clinics (SCs), where students provide healthcare services to individuals or groups free of charge or for a nominal fee (Kruger et al., 2015; Palombaro et al., 2011). Student clinics are increasing in prevalence, with the number of United States (US) medical schools reporting a clinic doubling in less than ten years (Smith et al., 2014). Occupational therapy is becoming recognized as a needed and respected discipline in both stand-alone (Doherty & Lay, 2019) and interdisciplinary SCs (Doucet & Seale, 2012; Kent et al., 2016; Lie et al., 2016; Rogers & Heck, 2017; Seif et al., 2014). As OT programs create SCs as a new method to provide experiential learning to their students, an evidenced-based process is needed to ensure the new SC is planned, implemented, and evaluated in an organized and coherent manner. The authors have developed the Student-Run Free Clinic (SRFC) Logic Model. The SRFC logic model (see Figure 1) offers organization for planning, implementing, and evaluating SCs.

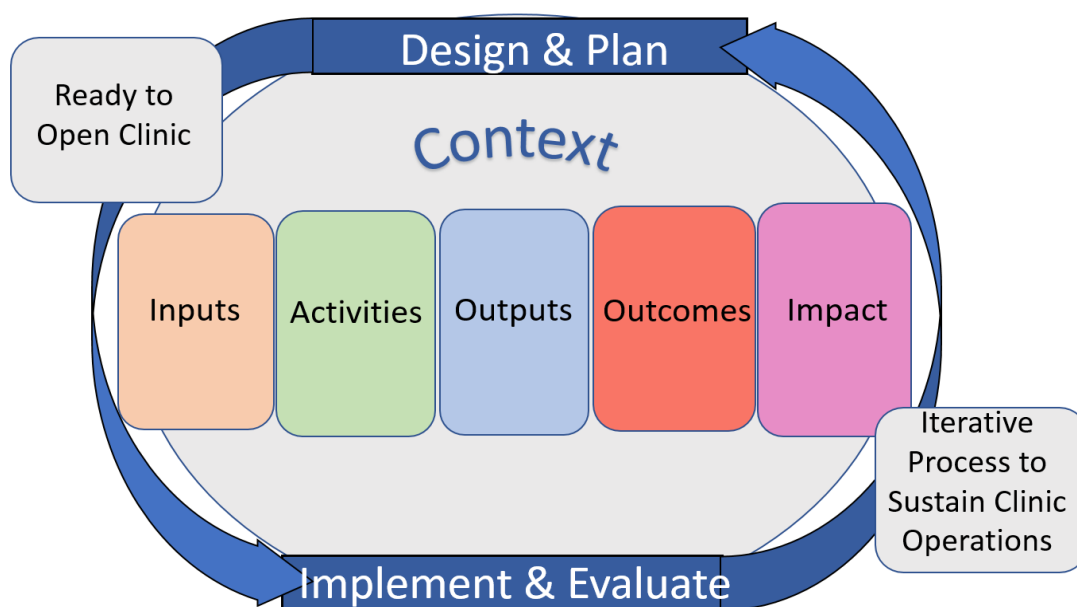


Figure 1. The SRFC logic model.

The SRFC logic model combines concepts presented in the Kellogg Foundation's *Logic Model Development Guide* (Kellogg, 2004) with methodologies of the *PRECEDE-PROCEED Model* (Green & Kreuter, 1999). Logic models include five components: inputs, activities, outputs, outcomes, and impact, with the program's context influencing these five components (Kellogg, 2004). Logic models are used throughout the literature to plan, implement, and evaluate programs (Cullen et al., 2016; Kellogg, 2004;

McLaughlin & Jordan, 1999). The SRFC logic model begins with a thorough assessment of the context of a developing SC, followed by moving through the components in a backward, right-to-left manner during the planning phase, before proceeding through the components in a traditional left-to-right manner during implementation and evaluation phases. This model encourages process evaluation while implementing the program, as well as critical analysis of outcome achievement during the evaluation phase. Any needed modifications are made iteratively to ensure the SC remains true to its goals. The SRFC logic model targets any SC, whether it is entirely student led or faculty/program directed.

The purpose of this paper is to demonstrate how we operationalized the SRFC logic model to plan and design, implement, and finally perform early evaluation of an SC as an educational innovation for experiential learning. Our SC, called the student experiential learning clinic for hand therapy (SELC-HT), is unique in that it provides services solely to under- and un-insured adults with hand and upper extremity conditions. We will present one cycle through the SRFC logic model as we explain the first semester of the SELC-HT after a designing and planning period. Examination of the outputs and outcomes of the first semester will be presented, as well as iterative changes that resulted from process evaluation to ensure the SELC-HT is moving toward its long-term goals.

### **Design and Planning of the SELC-HT Using the SRFC Logic Model**

#### **Needs Assessment**

Similar to other SCs reported in the literature (Arenas et al., 2019), a needs assessment guided planning of the SELC-HT. A needs assessment is a systematic process that identifies gaps in an existing situation that are preventing a preferred condition or outcome and uses these gaps to brainstorm feasible solutions (Altschuld & Kumar, 2010) and guide community health programming (Fazio, 2017). Two years prior to opening the SELC-HT, an entry-level OT student, who had completed a hand therapy Level II fieldwork, regularly attended our medical center's free hand surgery clinic as part of her doctoral capstone. The student saw patients with the surgeon and provided brief pro-bono OT services under the supervision of a certified hand therapist, who had previously treated pro bono patients as part of the mission of the university. She logged the diagnoses of patients treated, service(s) provided, and the need for additional OT. This information provided evidence that many of these under- and un-insured patients could benefit from OT, which was echoed by the therapists and surgeons working with this population. We also used existing data from community reports and the safety net hospital affiliated with the university, which demonstrated that 28% of the population within the city limits were living in poverty and 20% did not have insurance ("2016 Community Health Needs Assessment And Implementation Plan," 2016).

## **Context**

The SRFC logic model begins by thoroughly examining the context of the SC, as these external forces outside the SC can be facilitators or barriers to its long-term success (Baum et al., 2015; Kellogg, 2004; McLaughlin & Jordan, 1999). The wide range of contextual factors that must be explored include the economic, political, social, cultural, physical, technological, and any other environmental factors that can ultimately impact the SC. The OT educational program supporting the SELC-HT is at a research intensive university on a large medical center campus in a metropolitan area. This OT program has a keen interest in providing meaningful experiential learning experiences, narrowing health inequities, and generating innovative research. As a result, the OT educational program fully supported starting the SELC-HT. The program provided financial support, space, technology, and start-up equipment for the SELC-HT. An OT faculty member and post-professional doctorate student with hand therapy experience were interested in forming the SELC-HT, as well as several first-year doctoral students who aspired to learn more about hand therapy. Coincidentally, the OT program assumed operation of the adjacent medical center's hand therapy clinic at the time the SELC-HT was forming, which provided an additional contextual support. The SELC-HT is located in Missouri, a state without Medicaid expansion, and this policy creates gaps in healthcare access for many individuals in the metropolitan area ("2016 Community Health Needs Assessment And Implementation Plan," 2016). The adjacent medical center houses a safety net hospital that routinely delivers care to under- and un-insured individuals, including orthopedic and plastic surgery services to individuals with hand and upper extremity conditions. As a result, the attending hand surgeons, fellows, and resident physicians were supportive of the SELC-HT.

## **Impact**

After our contextual evaluation, it was time to identify the impact of the SELC-HT. Based on the SRFC logic model, the impact or impacts are identified prior to any other planning or implementation of the new SC. Impacts are the intended long-term and wide-reaching changes expected to occur within the organization or community as a result of a new program (Kellogg, 2004). Through our context evaluation, we identified three impacts for the SELC-HT: 1) to prepare students for future clinical practice as occupation-based clinicians, 2) to reintegrate a patient population in need of services back to meaningful roles in the community, and 3) to add to the body of OT evidence through dissemination of scholarly research (see Figure 2). Because the impacts of a program are long-term and wide-reaching, a direct cause-and-effect relationship is often difficult to establish (Kellogg, 2004). Therefore, the SELC-HT will influence these student and patient impacts, but it is not the only contributing factor to achieving these goals.

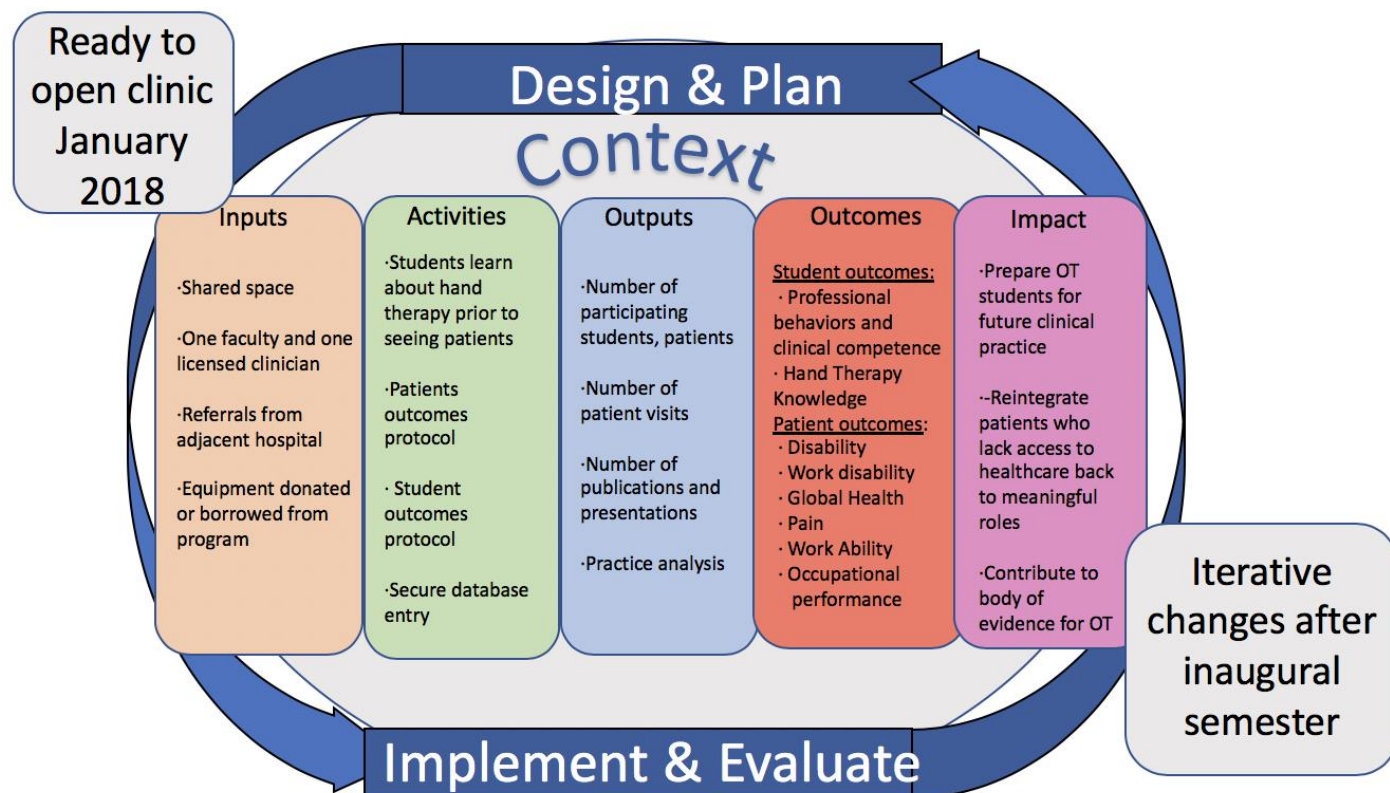


Figure 2. The SELC-HT logic model. Included are our impacts, and examples of our outcomes, outputs, activities, and inputs.

### Outcomes

The next step of the SRFC logic model is to identify the outcomes that the SC hopes to make. The outcomes are shorter-term measurable goals that reveal more specific changes than the impact (Kellogg, 2004). The SELC-HT selected outcomes for both students and patients to demonstrate movement toward the stated impacts (see Figure 2). Outcomes for student therapists include observed clinical behaviors while delivering patient care and growth in students' perceptions of their hand therapy knowledge. To measure students' clinical behaviors, the OT supervisor and student complete the American Occupational Therapy Association's Fieldwork Performance Evaluation (FWPE; AOTA, 2002), a standardized assessment measuring OT students' entry-level competency during a Level II fieldwork. Forty-two items are rated on a 4-point scale (1=unsatisfactory, 2= needs improvement, 3=meets, 4=exceeds) for the following seven areas: fundamentals of practice, basic tenets of OT, evaluation and screening, intervention, management of OT services, communication, and professional behaviors (AOTA, 2002). A score of 90 is considered passing at midterm, and 122 is passing at the conclusion of the Level II fieldwork (AOTA, 2002). Students' perceptions of their hand therapy knowledge are measured with the Hand Therapy Certification Commission's self-assessment tool (HTCC-SAT; HTCC, 2014). The HTCC-SAT is used by licensed clinicians to assess their readiness to sit for the certified hand therapist board exam. It includes 205 hand and upper extremity items arranged into four scales:

anatomy and physiology, diagnoses and conditions, intervention techniques and tools, and general knowledge, and uses a four-point knowledge scale, rated as limited, basic, advanced, or expert (HTCC, 2014).

For patient outcomes, it was essential to think beyond traditional biomechanical outcomes that are often the focus of the literature for patients with upper extremity impairments (Valdes et al., 2014). Keeping in line with the curriculum model of our OT program and the emphasis on outcome measures focusing on participation, we targeted disability, work disability, ability to work, pain, and global health status (see Figure 2). We chose the Disabilities of the Arm Shoulder and Hand (DASH) and the WorkDASH (Gummenson et al., 2003) to measure disability and work disability (on 0-100 scale, with higher numbers indicating higher disability), and the Work Ability Scale (a single question from the Work Ability Index) to measure work ability (on 0-10 scale, with higher numbers indicating greater ability to work; Ahlstrom et al., 2010). Additional work outcomes include work status (rated as retired, unemployed, employed but not currently working, working decreased duties/schedule, or working regular duty), and for employed patients, the physical demand level of their job (light, medium, or heavy) as measured by the Baecke Questionnaire of Physical Activity Scale (Baecke et al., 1982). The numeric pain rating scale measures current, worst, and best pain on a scale from 0-10, with a higher number indicating higher pain. The Patient Reported Outcome Measure Information System (PROMIS) Global Health measures patient health status, producing a mental health and physical health score, with a population norm of 50 and a standard deviation of 10 for each scale, and higher numbers indicating better health (Cella et al., 2010; Makhni et al., 2017). A telephone survey is administered six months post-discharge to measure work status and disability. The QuickDash is utilized due to its brevity and established reliability with the full DASH (Gummenson et al., 2006).

## **Outputs**

Outputs demonstrate the reach of the SC or the size and scope of the services of the SC (Kellogg, 2004). To examine the reach of the SELC-HT, we track the number of referrals, referral source, number of patients seen, number of evaluation and treatment sessions performed, number of student therapists/mentors/OT supervisors, and number of Level I fieldwork and capstone experiences performed in the SELC-HT. We also track our dissemination outputs, including number of presentations at the local, state, and national level, and the number of peer-reviewed and non-juried publications. In order to understand the practice patterns of the SELC-HT, students assign the percentage of the intervention session devoted to each intervention approach (occupation/activities, preparatory methods/tasks, education/training, advocacy, and group) and intervention type (establish/restore, modify/compensate, maintain, prevent, and create/promote) defined in the OT Practice Framework 3<sup>rd</sup> edition (AOTA, 2014). We measured preparatory methods, which includes modalities and orthoses, as well as preparatory tasks, which includes therapeutic activity and exercise. In keeping with our OT program's focus on the Person-Environment Occupation-Performance (PEOP) model (Baum et al., 2015), students log the occupations, person factors (physiological, motor,



sensory, psychological, and cognitive), and environment factors (physical, social, policy, technology, cultural, virtual) addressed every session (see Figure 2). Students also assign mock billing codes for each visit.

### **Activities**

SELC-HT activities are the heart and soul of clinical operations and the most fun aspect of planning a program. It was difficult for us to not immediately jump to this stage; however, only through examining our context, stating our impact, designing our outcomes, and understanding our outputs could we move to this component. Defining the activities without first having these factors in mind can be chaotic or even pointless. Because the SELC-HT gathers extensive data to measure our outcomes and outputs, we received Institutional Review Board (IRB) approval to design two Research Electronic Data Capture (REDCap) databases (Supported by Clinical and Translational Science Award (CTSA) Grant [UL1 TR000448] and Siteman Comprehensive Cancer Center and NCI Cancer Center Support Grant P30 CA091842) to securely house these data – one for patients and one for students. At the first visit, all patients must sign a consent acknowledging that pro-bono therapy will be provided by a trained student under close supervision of a licensed clinician. Patients are also asked to provide consent allowing information routinely gathered during therapy to be included in our patient database. This includes all evaluation and intervention data previously described, as well as re-evaluation (collected every sixth visit if applicable) and discharge results, and six-months post-discharge outcomes. First-year students participating in the SELC-HT consent to allow the FWPE and HTCC-SAT results to be entered into the student REDCap database. These centralized data repositories facilitate routine output and outcome tracking and allow for easy access for future IRB-approved research studies. Designing these databases, developing data entry procedures, keeping them up-to-date, training students to enter data, and ensuring that data is accurate are routine activities performed by SELC-HT faculty and students.

One of the first activities performed in the SELC-HT was training participating students in hand therapy content that extends beyond the traditional core entry-level curriculum, which educates students at a generalist level (Short et al., 2019). Training included common injuries and impairments, tissue healing, orthotics, assessments, and intervention methods appropriate for this population. Students were taught to balance occupation-based interventions while addressing impaired structures and functions. Students demonstrated specific knowledge and skills with a comprehensive in-person competency check-out prior to delivering patient care. Intake evaluation, treatment plans, and documentation forms were housed in a HIPAA-compliant electronic site that allows for virtual communication between students, mentors and clinicians. Since this is an educational clinic, we did not document in the electronic medical record system. We also held in-person weekly patient rounds. Patient care was provided two half-days a week in a designated classroom. Additional activities that would be important to the success of the SELC-HT included relationship building between the students and referring physicians, highly skilled students attending weekly physician clinic, and securing Level II fieldwork placements for doctoral students which focus on hand therapy.

## **Inputs**

The inputs for the SELC-HT are the resources required for its day-to-day operation (Kellogg, 2004); including human resources (participating students, supervising clinicians, referral sources, community partners), materials (space, therapy supplies/equipment, computer/phone), policies and procedures, and financial support. Inputs that were already in place in the OT program include the physical space, computer access, printing, email, telephone, patient parking facilities, professional liability insurance for students and clinicians, access to REDCap, secure patient record storage, and financial support for clinicians, supplies, and equipment. Students in this OT program complete a three (master's) to five (doctorate) semester mentored scholarly experience in a faculty member's laboratory, with doctoral students selecting their mentor and master's students assigned through a "top three choices" process. The three entry-level doctoral students in the first cohort of the SELC-HT participated in the semester-long hand therapy training described above. They then treated patients for one semester under close supervision of a faculty member and a post-professional doctoral student in the laboratory who holds certification in hand therapy (CHT).

Supervising faculty met with orthopedic and plastic surgeons at the adjacent medical school to establish a relationship for referrals. Students had already completed HIPAA and human subjects training, CPR certification, and had access to the building, email, and electronic storage system. Policies and procedures from an established SELC were modified for usage in the SELC-HT. The OT program provided supplies and equipment such as towels, hand sanitizer, hot packs, standardized evaluations, and basic treatment equipment. Supervising clinician and participating students donated additional supplies for simulation of daily occupations and activities.

## **Implementation and Evaluation of the SELC-HT Using the SRFC Logic Model**

After securing all of the inputs needed to operate the SELC-HT, we opened in January 2018. We implemented all planned activities and routinely administered all outcome measures to both students and patients. At the end of the semester we extracted and analyzed our data to examine early outputs and outcomes and determined how well our planned inputs and activities were helping influence our intended impact. Outputs for the first semester are described in Figure 3. The three student therapists performed 82 visits with 15 patients, during the first semester of clinic operation, allowing access to healthcare that would have otherwise been denied. Seventy-three percent of our patients underwent at least one surgical procedure. Our three most common diagnoses were fractures, nerve injuries, and soft tissue injuries/tendonitis. We experienced high cancellations and no-shows, with patients citing transportation issues and our limited hours as reasons for cancellation. Nearly every treatment session addressed person, environment, and occupation factors; including occupations in every domain of OT. These factors were addressed throughout the treatment session through assessments, goals, and formal and informal discussions of occupational performance. This demonstrates that the PEOP model is strongly embedded in the SELC-HT; however, interventions at the occupation or activity level (Intervention Type) only occurred 18% of the time despite students addressing patients' occupations in some capacity in every treatment session. Use of the restorative approach was notably higher than other approaches. We had early success disseminating our work, with one abstract accepted to a regional professional conference.

## **Reach: SELC-HT First Semester Outputs**

Students: 3  
 Patients seen: 15  
 Patient referrals: 23  
 Patient Visits: 82  
 Peer-Reviewed Presentations accepted: 1

### **Practice Analysis:\***

#### **PEOP Model Analysis:**#

Occupations: 100%  
 Person factors: 98%  
 Environmental factors: 98%

#### **Occupations Addressed (OTPF):**

Instrumental activities of daily living: 91%  
 Work: 68%  
 Leisure: 59%  
 Activities of daily living: 56%  
 Social participation: 53%  
 Rest/Sleep: 26%  
 Education: 19%

#### **Intervention Approach (OTPF):**<sup>α</sup>

Restore: 67%  
 Modify: 13%  
 Create: 9%  
 Maintain: 6%

#### **Intervention Type (OTPF):**

Prevent: 5%  
 Preparatory tasks: 54%  
 Activity/Occupation: 18%  
 Education: 16%  
 Preparatory methods: 11%  
 Advocacy: 1%

*Figure 3.* SELC-HT first semester outputs. \* Includes all intervention sessions among the three student therapists. # Refers to percentage of intervention sessions that included the three components of PEOP Model and categories of occupation, as outlined in the OTPF, 3<sup>rd</sup> Ed.; both categories rated as “yes/no” during individual intervention sessions. <sup>α</sup> Refers to total percentage of time spent using each intervention approach and applying each intervention type, as outlined in the OTPF, 3<sup>rd</sup> Ed., during the inaugural semester. Individual intervention sessions needed to add to 100% in each category. Every intervention session addressed more than one construct in the categories of PEOP Model, Occupations Addressed, and Intervention Type. Intervention Approach may only have one construct selected per intervention session.

Analysis of the student and patient outcomes was performed as planned in the SRFC logic model (red section described in Figure 2). For students, the hand therapy-related knowledge assessed by the HTCC-SAT revealed a mean total knowledge score improvement of 0.81 points (on 4-point scale) from a score of 1.45 (between limited knowledge and basic knowledge) prior to advanced hand therapy training to 2.26 (between basic and advanced knowledge) after one semester of treating patients ( $p=0.109$ ,  $Z=-1.604$ ). Students’ self-rating score of professional behaviors and clinical competencies measured on the FWPE improved an average of 31 points from 100 mid-

semester to 131 at the end of the semester (FWPE:  $p=0.109$ ,  $Z= -1.604$ ). Neither of the first semester student outcome measures showed statistically significant changes, likely due to the small sample size of three. Mentor ratings on the FWPE at the end of the semester demonstrated a mean of 123 points.

First semester patient outcomes demonstrated a statistically significant 25.36-point decrease in mean disability from 49.40 at initial evaluation to 24.04 at discharge ( $p=0.018$ ,  $Z= -2.366$ ). Patients also demonstrated a statistically significant 4.82-point decrease in mean work disability from 78.57 to 43.75 ( $p=0.027$ ,  $Z=-2.207$ ), and a statistically significant 4-point increase in work ability score ( $p=0.027$ ,  $Z= -2.214$ ). Most patients (66%) were employed at the time of the initial evaluation; with the majority of patients reporting their jobs in the medium or high physically demand level. Although pain scores did not reach statistical significance, the highest pain rating decreased by an average of 2.85 points, from 7.71 initially to 4.86 at discharge ( $p=0.092$ ,  $Z=-1.841$ ), current pain rating decreased by 2.43 points, from 4.86 to 2.43 ( $p=.074$ ,  $Z=-0.74$ ), and best rating decreased by 2.15 points, from 3.29 to 1.14 points ( $p=0.66$ ,  $Z=-1.841$ ). Patients demonstrated a mean initial physical health score of 40.66, which is within one standard deviation of the population mean; and a mental health score of 39.60, one standard deviation below the general population mean. These scores remained stable, with discharge scores within one point of initial scores for both the physical and mental health scales.

#### **Iterative Changes After the Inaugural Semester of the SELC-HT**

We reflected on the outputs and outcomes of the inaugural semester to identify opportunities for improvement, which is an important aspect of the SRFC logic model (see Figure 1). Regarding our outputs, we were pleased with the number of referrals received by hand surgeons in training. However, we experienced high cancellations and no shows, which we could only estimate, due to lack of formalized means to collect data. We instated methods to routinely track and record missed appointments for the following semester. Since most outcomes targeted by the SELC-HT were at the participation or performance level, we were excited that students maintained an occupation focus in every treatment session. We were concerned that only 18% of interventions delivered were directed at the activity or occupation level (see Figure 3), yet the high level of interventions at the preparatory task level (54%) was likely an accurate reflection of the practice patterns as we did not have supplies in place to perform real or simulated performance of activities or occupations as defined by the OT Practice Framework 3<sup>rd</sup> edition (AOTA, 2014). Although occupation as a means for remediation cannot always be addressed in the acute post-operative phase, the majority of our patients were well beyond the acute phase. When reviewing literature on occupation-based care, occupation kits emerged as a possible method to incorporate activity and occupation into treatment sessions. This idea of having a method to provide overt and easily accessible items to increase the use of occupation intrigued one of our doctoral students. She elected to complete an extensive review of this literature and use a scientific methodology to develop ten occupation kits (Berlet & Kaskutas, 2020). We will use these occupation kits in the SELC-HT and evaluate their usage and effectiveness.

Despite our small sample sizes, the demonstrated improvements in both student and patient outcomes demonstrate that the SELC-HT is contributing to our stated impacts for these stakeholders and is creating scholarship to contribute to the body of OT knowledge. When reflecting on our outcomes, we realized that we were not including the patients' perspectives in outcomes. In order to practice client-centered care, it is imperative to integrate the patient's goals into treatment and track personal goal achievement. Therefore, we have added the Patient Specific Functional Scale (PSFS) (Horn et al., 2012; Stratford et al., 1995). We also identified that we were not gathering patients' satisfaction with the provided treatment in helping them live their daily lives. A short patient satisfaction survey was developed to be administered at discharge in the future. Once we implement these additions and modifications, we will again perform formative assessments of our program processes and summative assessment of our outputs and outcomes and continue to repeat this cycle throughout the life of the SELC-HT (see Figure 1). One of the doctoral students in our first cohort is analyzing patient and student outcomes of our SC for his doctorate research and capstone project.

The SRFC logic model promotes thorough outcome evaluation following the initial implementation phase and after iterative changes to ensure the SC moves toward the impacts. We also used program evaluation routinely as a formative assessment to fine-tune the SELC-HT to keep it on track (Saunders et al., 2005), which has facilitated modifications as soon as possible, including immediately if feasible. Program evaluation examines both how the program was delivered to the key stakeholders and how the program was received by these stakeholders (Saunders et al., 2005). We assessed whether the components of the SELC-HT we had planned, as outlined in the SRFC logic model, were carried out as intended (program delivery evaluation), and considered the student, patient, and OT program's experience (program reception evaluation). Overall, the program evaluation of the first semester was positive, indicating that the SELC-HT would continue to be a viable experiential learning method for the students while providing needed healthcare access for under- and un-insured patients with hand and upper extremity conditions. We determined several areas that required prompt change, nevertheless. For example, we created a protocol for collecting student data as part of our planned activities, but we discovered it was not implemented through to completion at midterm, and therefore, our program was not delivered as intended. We noticed incomplete FWPE data at midterm and immediately clarified the process, so all students had a completed FWPE at the end of the semester. Additionally, we found that both student and mentor ratings on the FWPE were higher than the passing score students needed at the conclusion of Level II fieldwork, and these students had not yet begun a Level II fieldwork. As a result, we reviewed the operational definition of the rating scale and committed to following it closely to ensure that the ratings accurately reflected students' performance relative to entry-level competency.

Another example of using program evaluation to make a formative change is our student training. Although our early outcomes on the HTCC-SAT and FWPE demonstrated modest increases in hand therapy-related knowledge and OT professional behaviors while in the SELC-HT, they were not adequately prepared in the area of hand therapy assessment and intervention when the clinic initially opened.

Contrasted with the previous example with the student data collection protocol, this activity was implemented as intended, but the reception from faculty and students indicated it fell short of what was needed. We had not allotted adequate time to prepare the student training, plus we wanted to include evidence-based educational practices in this training, such as case studies and a flipped classroom environment. We also added psychomotor practice to ensure students demonstrated competence with evaluation techniques, such as range of motion and sensory testing, and administration of our patient-reported outcome measures and consent forms. One of the doctoral students in the first cohort adopted revision of the student training for her doctoral project.

### **Discussion**

The philosophy of OT education states that the curriculum should support an “active and diverse learning within and beyond the classroom environment” (Iwama et al., 2015). Experiential learning supports this philosophy, providing students a hands-on opportunity to put into practice what is learned in the classroom (Coker, 2010; Knecht-Sabres, 2013; Smith & Crocker, 2017; Yardley et al., 2012a). Student clinics are emerging in healthcare education as a feasible way to add a meaningful experiential learning opportunity (Doucet & Seale, 2012; Kruger et al., 2015). When challenged to add experiential learning opportunities to students, our OT program recommended forming practice-area specific SCs. Not only would these SCs have the overall impact of developing students into competent clinicians, they would help decrease health inequities of the surrounding community (Doucet & Seale, 2012; Rogers & Heck, 2017; Seif et al., 2014). Use of the SRFC logic model provided an organized means for us to design and plan the SELC-HT to move toward these impacts, to develop activities and processes to successfully implement our clinic and achieve satisfactory outputs and positive outcomes after our first semester. Use of the SRFC logic model prevented many of the growing pains that new programs (and new SCs) experience. This model encouraged us to regularly evaluate existing processes to ensure they are meeting our needs, plus develop additional processes needed to fine-tune the overall SELC-HT experience.

The SELC-HT lays the foundation for students for a future Level II fieldwork placement and/or clinical practice in hand therapy. Each student was able to maintain a caseload of up to three patients at a time and address issues common in the uninsured population. The students reported growth in their hand therapy knowledge and supervisors observed growth in OT professional behaviors. The first cohort of students received specialized training, and through the program modifications outlined above, the next cohort will receive even more training targeting the necessary skills to be successful in this area of practice. All three students in the first cohort pursued a hand therapy-intensive Level II fieldwork following their semester in the SELC-HT. It is the OT program’s hope that with their advanced training, their ability to maintain a small case load while in the SELC-HT, and their demonstrated growth in professional behaviors that students are able to excel in their Level II fieldworks and beyond.

### **Implications for Occupational Therapy Education**

This paper demonstrates how a specialty SC can be successfully implemented with OT as a stand-alone discipline within the context of an OT program. Previously, most SCs featuring OT did so in a multi-disciplinary context (for example: Doucet & Seale, 2012; and Lie et al., 2016). For SCs that were embedded solely within the OT program, many were used primarily as an experiential learning method, considering the important outcomes for OT students, with less emphasis on patient and client outcomes (for example: Goldbach & Stella, 2017; Knecht-Sabres, 2013). We designed our SC to examine both student and patient outcomes, and we did so at the very beginning, aligning ourselves with the OT research agenda (Grajo et al., 2018) as well as adding to the evidence base for OT and for hand therapy.

The SRFC logic model was used as the guiding framework for a specialty practice area SC but has applications beyond the example presented in this paper. The SRFC logic model can be used for a general OT or a multi-disciplinary SC; for SCs that are purely student-run or for those who have more faculty and program oversight. Stakeholders in OT education interested in adding an SC as a method of experiential learning should use the SRFC logic model to ensure that the proper steps occur in the planning phase, that the necessary steps are implemented as planned and finally that the SC is properly evaluated, with iterative steps occurring as needed.

### **Conclusion**

The SRFC logic model provided the systematic framework for planning, implementing, evaluating, and then making these needed changes to the SELC-HT, an experiential learning opportunity for OT students. This model helped the SELC-HT progress towards two of our intended impacts: 1) to develop students into competent occupation-based clinicians, 2) to reintegrate a patient population in need of services back to meaningful roles in the community. The third impact of the SELC-HT is to add to the body of OT evidence through dissemination of scholarly research. We have begun presenting our outputs and outcomes of the first semester of the SELC-HT at a regional conference with abstracts to national conferences planned in the following year. One of the doctoral students in our first cohort is analyzing patient and student outcomes of our SC for his doctorate research and capstone project. We will add outcomes as we identify new or changing needs, easily added to our processes through the SRFC logic model. As we welcome new students to our laboratory and continue to treat patients in need of OT, we will continue to add to our current outcome and output data. We will survey Level II fieldwork supervisors of students participating in the SELC-HT to explore the students' level of preparation and ability to succeed in hand-therapy intensive fieldwork placements. We will also survey students after graduation to explore their perceptions of the effect of participating in the SELC-HT on their development and choice of employment setting. We will disseminate our scholarship in a variety of venues, including juried publications to add to the body of OT evidence.

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