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Abstract

Occupational therapy educators utilize varied educational theories to prepare occupational therapy students to develop the knowledge, clinical reasoning, and professionalism necessary for successful Level II fieldwork completion. Students need to be equipped to apply didactic knowledge to patient intervention and care. Students can benefit by engaging in authentic experiences that extend didactic learning to real life challenges. Providing such experiences requires careful thought and consideration of course design by faculty. This manuscript describes the use of experiential learning and self-regulated learning theory to design and implement a student-run, community-based cognitive rehabilitation program for breast cancer survivors. This program afforded the students the opportunity for real life experiences requiring adjustment and adaptation to the situational demands of occupational therapy practice.

Keywords

Instructional methods, experiential learning, self-regulated learning

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Occupational Therapy Students' Experiential and Self-Regulated Learning in a Community Program for Breast Cancer Survivors

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ABSTRACT

Occupational therapy educators utilize varied educational theories to prepare occupational therapy students to develop the knowledge, clinical reasoning, and professionalism necessary for successful Level II fieldwork completion. Students need to be equipped to apply didactic knowledge to patient intervention and care. Students can benefit by engaging in authentic experiences that extend didactic learning to real life challenges. Providing such experiences requires careful thought and consideration of course design by faculty. This manuscript describes the use of experiential learning and self-regulated learning theory to design and implement a student-run, community-based cognitive rehabilitation program for breast cancer survivors. This program afforded the students the opportunity for real life experiences requiring adjustment and adaptation to the situational demands of occupational therapy practice.

Occupational therapy educational programs provide both didactic content and experiential learning experiences with the goal being to graduate entry level occupational therapists (ACOTE, 2019). Clinical reasoning skills of entry level or novice therapists is at a lower level than that of experienced therapists (Gibson et al., 2000) and it may take years of practice and continuing education to achieve an expert level (Scaffa & Smith, 2004). Rapid changes in healthcare delivery demand a higher level of clinical reasoning on the part of entry level therapists but clinical reasoning skills can be facilitated with multiple uses of information (Schell & Schell, 2018). An elective was developed to provide a community-based experiential learning experience for students and to provide cognitive rehabilitation to breast cancer survivors. The elective required students to use self-regulation to obtain the necessary didactic content,

research evidence based interventions, and intervene while reflecting on the experience. The purpose of this manuscript is to explain how self-regulated learning was utilized in the steps of the experiential learning cycle in the elective course.

Experiential Learning Theory

According to experiential learning theory, learners take knowledge and create meaning by engaging in real world experiences (Knecht-Sabres, 2013; Law, 2010; Yardley et al., 2012). Kolb's (1984) learning theory, the Experiential Cycle of Learning, espouses that learners transform knowledge through real experiences using the processes of apprehension and comprehension. The student has a concrete experience, reflects on that experience, refines prior knowledge, and then engages in active experimentation based on the reflection in a new experience. Going through this process of planning, doing, and reflecting teaches students to be reflective practitioners (Hill, 2017) and signifies the core processes and mechanism of change of experiential learning.

To help students develop clinical reasoning, educators may use experiential learning theory as a framework to provide authentic learning opportunities through the process of doing and reflecting (Hill, 2017). Doing in experiential learning for occupational therapy students requires going through the process of interacting therapeutically and often involves providing intervention. Clinical reasoning is developed through engaging in the doing process and reflecting on the interaction. Paper based case study and problem based approaches to clinical reasoning have demonstrated poor transfer to developing clinical reasoning skills (Coker, 2010). Experiential learning bridges the gap of paper learning through real life contextual experiences. It is a well-documented means of instruction in a variety of medical professions education including nursing programs (Hill, 2017; Lisko & O'Dell, 2010), physical therapy (Skinner et al., 2016), and medical programs (Yardley et al., 2012). Experiential learning theory provides a direct, effective mechanism to expand didactic knowledge and apply to real world clinical experiences, which is necessary for students to develop clinical reasoning skills.

Self-regulated Learning

Student performance can be improved through self-regulated learning (Kizilcec et al., 2017). Self-regulated learning is a student's modulation of the affective, cognitive, and behavioral responses during learning experiences to enrich performance (van Houten-Schat et al., 2018). Self-regulated learners are "metacognitively, motivationally, and behaviorally active participants in their own learning process" (Zimmerman, 1989, p.1). Self-regulated learning models include three phases: a preparatory phase of learning, which includes planning; a performance phase; and reflection or appraisal phase (Kizilec et al., 2017). Self-regulation of didactic knowledge is thought to be enhanced through instruction, peer interaction, and collective theorizing (Schraw & Moshman, 1995). Student application of classroom knowledge in a real-world experience requires, as part of the learning process, the student to plan for the experience, go through the experience, engage in peer discussion, receive relevant feedback, and be guided through the reflection process. van Houten-Schat and colleagues (2018) indicated that students need opportunities to improve individual goal setting and reflection skills

through practice. Experiential learning opportunities for students require the practice of self-regulated learning using metacognition to develop clinical reasoning skills.

Metacognitive activities require the learner to practice the skills of planning, monitoring one's performance, and evaluating one's goals and conclusions (Schraw & Moshman, 1995). Reflection is a mechanism to construct metacognitive knowledge (Harvey et al., 2016). Throughout the experiential learning experiences, through the student's personal self-regulation process, reflection can be incorporated to help the student regulate the learning process. Reflection in action occurs in the midst of doing and is considered the thinking on one's feet, thinking about what one is doing while doing it, or learning in action (Schon, 1983). Reflection within the planning of the experience requires the student to think through the activity and engage in goal setting (Medina et al., 2017). Reflecting during the experience allows the student to make changes in the moment due to unexpected events requiring problem solving (Hargreaves, 2016). When reviewing the experience, the student considers what went well, what could have gone better, and what changes would have improved the experience. Reflection can be facilitated through debriefing to process the concrete experience, to draw lessons from what the student experienced, and to consider the experience in new ways (Dennehy et al., 1998). Debriefing guides the student through the reflection process. Careful questioning in the process using probing questions is a means for the instructor to facilitate reflection in the students (Medina et al., 2017). It is within these metacognitive activities that students demonstrate self-regulated learning and the teaching reflective practice to develop clinical reasoning takes place.

Process of Course Preparation and Implementation

Faculty created an elective course to provide the students the opportunity to use evidence to design and implement a community-based cognitive rehabilitation program for breast cancer survivors. The faculty used Kolb's (1984) Experiential Learning Cycle as a primary framework for development of the course, and integrated elements of self-regulated learning, using metacognitive and reflective activities. The course had five students and went over two semesters. The first semester was used primarily for planning and the second was used for implementation of the program.

First Semester

During the first semester the students met with the instructors weekly for an hour and the instructors were available as needed for guidance. Learning activities included completing a literature review, learning to administer and score the assessments for the program, completing training for human research, and planning and obtaining supplies for their individual sessions with clients. The instructors retrieved articles on cognitive deficits common to breast cancer survivors as well as interventions for those deficits. Students selected which cognitive deficit they wanted to research. They brought the researched information to the class and presented their findings to their peers.

The students were then charged with the task of designing an evidenced-based group intervention for their researched cognitive skill. Group interventions designed by the students utilized the group process protocol by Cole (2012). Students submitted their group treatment session to the instructors for feedback and guidance. The instructors

provided feedback and then met with the students as a group to discuss each treatment session and allow the students to problem solve, to refine their respective interventions, help them anticipate potential difficulties with their plan, and explore possible solutions.

Second Semester

During the second semester, the program ran for five weeks once weekly in the evening for two hours. There were testing sessions for participants at the beginning and end of intervention, and a final focus group for the participants, which the students were given the option of attending. Students were also required to participate for an hour in a debriefing and planning session the day after each group session.

The students were responsible for all aspects of the intervention session that they prepared, including gathering all supplies and bringing them to the session. The students were responsible for running the group they had each planned while the other students provided one to one assistance as needed to group members. The instructors were in the group for support but allowed the students to run the intervention and make all decisions in the moment that arose such as timing, transitioning, and steering discussion. Students had been advised to recruit the instructors' help as needed at any point in the session.

After each group session, when the participants had left, the students and instructors went through a quick debriefing session. Students were encouraged to comment on their observations, ask questions of events they did not understand, discuss the unexpected things that happened in the session, and process the emotional aspects of the session. They were then to go home and reflect about what worked well, what did not work well, and what things would need to be modified for the next week's session.

The next day, each student brought ideas based on their reflections, and the group discussed how the next session should proceed and what modifications would be necessary based on how the previous session went. The instructors employed teaching strategies including probing questions and talking out loud their own clinical reasoning to facilitate the students' clinical reasoning of the session and to guide upcoming session changes. After the reflection, students made changes and prepared for the next session. This process continued throughout the program following Kolb's (1984) experiential learning process with self-regulated learning strategies including the metacognitive strategies of evaluating one's goals, theorizing and reevaluation of the experience, planning, and monitoring one's progress.

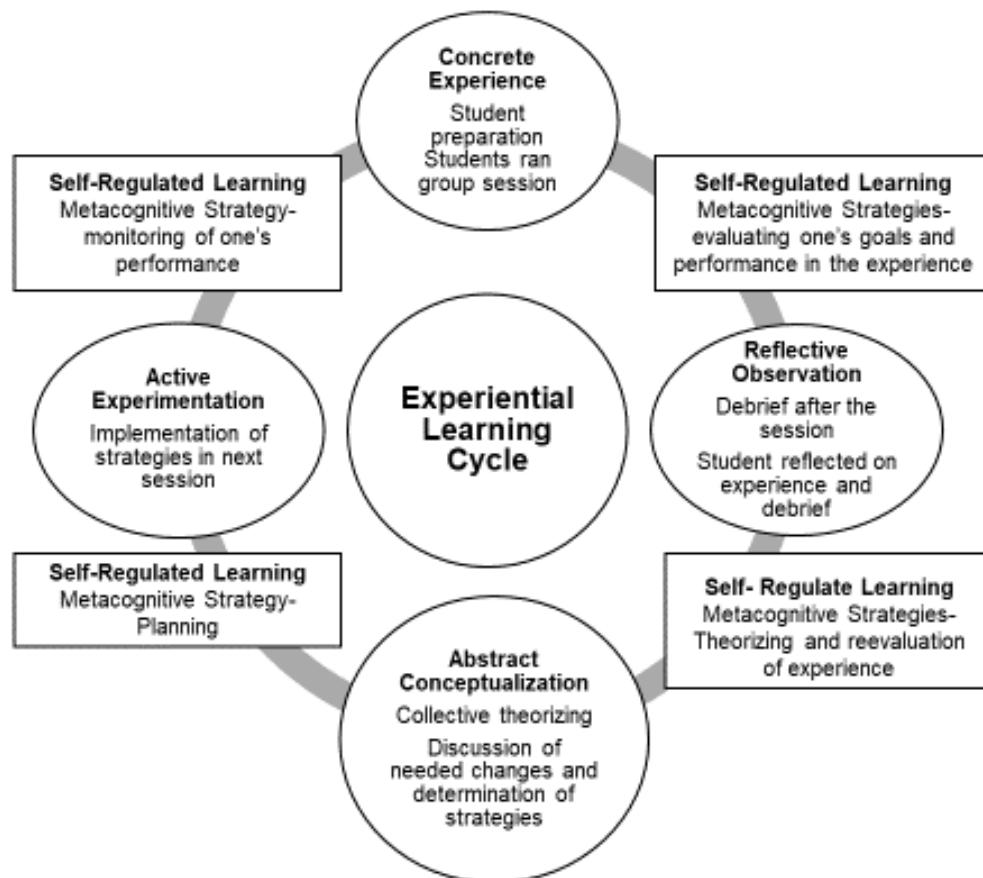
Application of Experiential Learning Theory

Literature supports that instructors using an experiential learning framework act as facilitators to the learning process (Sewchuk, 2005). This course was designed so that the students could transform their learning of didactic coursework which had occurred in previous semesters by incorporating classes on evidence based practice, therapeutic use of self, group process, cognitive rehabilitation, and psychosocial practice. Students went through the process of creating knowledge through literature review and discussion, experiencing a real-world encounter, and making adjustments to

intervention sessions in real time. By reflecting on the experience and comparing it to expectations, the students refined their knowledge, actively experimented with changes for the next session, and repeated the process again. Self-regulated learning was utilized using metacognition and reflection through this learning experience providing a rich learning opportunity to students. The following are observations of the instructors' intent and students' responses while navigating Kolb's (1984) experiential learning cycle and self-regulated learning theory (see Figure 1).

Figure 1

Community Experience using Kolb's Experiential Learning Cycle and Self-Regulated Learning (Adapted with permission)



Students engaged in the cycle of experiential learning with self-regulated learning activity after each aspect of the cycle to process and solidify the experience and in preparation for the next step in the cycle. The following is a description of what occurred at each piece of the process.

Self-Regulated Learning

The metacognitive strategy of planning occurred within the didactic portion of the course. To begin the process, ample time was spent on preparation for the experience. This preparation process included a metacognitive activity of reflection for action. From the literature summary, the students achieved a better understanding of cognitive impairment associated with breast cancer treatment, the impact of cognitive impairment on occupational participation, and understanding evidence based treatments to enable them to engage in reflection for action.

These reflections, for action learning activities, provided the groundwork to create meaningful, evidence based interventions. Spending time in the planning process, receiving feedback from instructors, and taking time to visualize and think about how the session would look prior to its implementation allowed the students to adjust preparation and necessary supplies. Some of the results of this process for students included making changes in the timing of activities, modifications to the supplies needed for the session, and one student included pictures of herself incorporating compensation strategies. Going through these processes helped the students feel more prepared and confident for their session in the concrete experience.

Concrete Experience

The concrete experience of Kolb's (1984) experiential learning theory was implemented in the community as group intervention sessions for breast cancer survivors. Each session allowed the students the opportunity for multiple concrete experiences. While one student ran the session, the other students supported the participants during the activities and spurred discussion. All students were able to experience leading and supporting and made observations from each perspective at some point during the experience. Reflection in action occurred during the concrete experience as the students adjusted to challenges faced in the session (Schon, 1983). For example, in one session a significant portion of the session was going to be teaching the group members different apps to use but the facility did not have WIFI. This required the student to reflect on what was happening and modify the session in the moment. Students also had to adjust when group members did not understand the conversation or when members got off topic. Some of the observations the students expressed throughout the sessions included: matters that interfered with the group process or that were difficult to deal with in the session; participants who tried to take over the discussion or promoted an atmosphere of negativity in the group; the cognitive tasks that were difficult for different participants; and the small unexpected victories the participants encountered and celebrated in the process as a result of the interventions.

During the concrete experiences, the students connected the information they had learned in their didactic classwork to some of the challenges with real clients such as the implications of a cognitive impairment. The students expressed surprise at the participant's responses, the amount of time testing and activities took to complete, and how the participant's personalities impacted the group interactions. These discoveries were difficult to translate and make meaningful to students in the classroom setting or through paper case studies but came alive in these real experiences and were brought out during the reflective observation.

Self-Regulated Learning- Evaluating One's Goals and Performance

Debriefing was completed at two points to initiate the reflection process, immediately after the session to question and discuss how the students felt during the session and to process the emotional aspects of the session and the following day in the reflective observation. After sessions, the short debriefing took place for the students to process what happened in the group, ask questions, and check their perceptions with peers and faculty. They then went home and wrote a reflection in preparation for the discussion the subsequent day. During this time, the students considered their performance including what they thought they did well and what they thought they could do better in the future.

Reflective Observation

Further reflection on the session and processing occurred the next day, which generated ideas for the following cognitive rehabilitation session. During reflective observation, self-regulated learning strategies were employed by the instructors which included theorizing and reasoning why things happened the way they did and their evaluation of the experience. This allowed for the students to confront their expectations based on what they had learned in class and how the sessions occurred in real life. They became aware that how they expected situations to occur did not always match the reality when working with a client. Without reflection, the sessions could have continued but proactive strategies might not have been employed to address situations that became disruptive to the group. One such example was consideration of psychosocial components and strategies to incorporate into the session to create more positive discussion and interactions in the group were areas that the students reflected on and decided needed to be addressed. Students had not anticipated the psychological impact that breast cancer treatment had on the survivors years after treatment and its impact on the group processing interactions. Many of the group members remained traumatized by their breast cancer treatment, by their interactions with healthcare workers during that time, and reactions from family and friends which resulted in negative feelings (Smith et al., 2019). Although this was a group to address cognitive rehabilitation, the psychological components could not be ignored which led to the creation of strategies in the abstract conceptualization.

Abstract Conceptualization

The debriefing and reflection required the students to go through the process of abstract conceptualization. Abstract conceptualization is the new ideas that come from the reflection of the experience. The result of the students' abstract conceptualization was

the new strategies they were going to incorporate in the next sessions. Self-regulated learning was incorporated by planning how to implement the new strategies created in the abstract conceptualization phase. One of the changes the students made was based upon this process and included maintaining the focused breathing activity instituted in the first group session to focus attention. Another change was everyone stating something positive about the day to the group to change the focus of group thinking from negative thinking to positive thinking. The students also implemented arranging the room and position of students and group members to best facilitate discussion during sessions and improve group dynamics. Students positioned themselves between the participants so they would not engage in disruptive conversation and so the participants would have a student available to help as needed in the session. Setting up the room prior to the participants' arrival allowed them to direct the participants to the seat that they wanted them to sit in. This change enabled the students to break up participants that sat by each other and were disruptive.

Active Experimentation

After the debriefing, reflection, and abstract conceptualization, the students incorporated their new strategies into the next session exhibiting the process of active experimentation. Active experimentation is when the learner tries out the new ideas they came up with in the abstract conceptualization phase. Each week new problems would arise in the session and the students would generate solutions to target the encountered difficulties. The active experimentation was a continual process of implementing new strategies based on concrete experience, reflective observation, and abstract conceptualization. Throughout the experience, students expressed surprise at the responses of the participants and the impact of cognitive difficulties in a real-life situation, frustration at some point leading the conversation, and a new understanding of administering assessments to individuals with cognitive challenges. Students demonstrated shifts in their approach in the moment at times and other changes were made in response to their reflection and Kolb's (1984) experiential learning cycle.

By using both Kolb's (1984) experiential model and self-regulated learning, going through debriefing, reflection, and abstract conceptualization, the students improved the sessions each week in active experimentation. As the students came up with solutions to the problems encountered in a session, once incorporated, that area would improve but other areas to target would surface and need to be addressed consistent with the cyclical nature of Kolb's (1984) experiential learning. The use of Kolb's (1984) learning theory enhanced the clinical reasoning process for the students and ultimately the group interventions for the participants involved. Table 1 summarizes the key aspects of the experiential learning process.

Table 1

Experiential Learning Process

Experiential Learning Component	Self-Regulated Learning	Learning Activity	Student Outcome
Concrete Experience	<ul style="list-style-type: none"> • Planning prior to experience • Reflection during the session 	<ul style="list-style-type: none"> • Class preparation • Running group sessions • Assisting with participants 	<ul style="list-style-type: none"> • Create well thought out, evidence-based interventions for planned sessions • Gain understanding of the time factors during the session • Gain understanding of the psychosocial factors in sessions • Gain understanding of how client impairments influence participation
Reflective Observation	<ul style="list-style-type: none"> • Reflection on action • Evaluating the goals of the session 	<ul style="list-style-type: none"> • Debrief • Peer interaction • Collective theorizing 	<ul style="list-style-type: none"> • Discuss the frustrations experienced within the session • Identify what went well and what could have been improved • Share feelings with fellow students about the experience and what could have been the

			reason for the experience outcomes
Abstract Conceptualization	<ul style="list-style-type: none"> • Creation of new knowledge • Planning the implementation of new knowledge 	<ul style="list-style-type: none"> • Discussion of possible changes and strategies • Reevaluation of session goals 	<ul style="list-style-type: none"> • Decide strategies to implement to address problems from the previous session • Adjust treatment plan as needed
Active Experimentation	<ul style="list-style-type: none"> • Monitoring • Reflection in action 	<ul style="list-style-type: none"> • Implementation of changes and strategies 	<ul style="list-style-type: none"> • Implement strategies- redirection of the conversation and ensuring all participants participate in discussion • Adjust teaching methods when participants have difficulty understanding

Discussion

This manuscript described how faculty facilitated students to use the steps of the experiential learning cycle and self-regulated learning in a community program run by occupational therapy students. As occupational therapy curricula evolve and programs have a need for expanding into community settings and emerging practice areas (McGrath et al., 2014), faculty will be called upon to design learning opportunities driven by theoretical knowledge. Experiential learning theory can be utilized to design these experiences to provide positive outlets for faculty practice, student learning, and community collaboration. Self-regulated learning theory provided the faculty a framework to incorporate metacognitive activities such as reflective thinking. Teaching through the lens of experiential learning theory and self-regulated learning guides instructors in facilitating the students' thinking and reflective practice through the intervention planning, feedback to refine the planning process, engaging in authentic experiences, and repeating the cycle. Allowing the students the opportunity to react and adjust in the moment to occurrences that the students and the instructors could not predict would happen and adjusting treatment planning of future sessions based on reflection of what occurred, provide a richness that cannot be replicated through case studies and require careful thought to the best way to react without negatively impacting

the therapeutic relationship. Knecht-Sabres (2013) found that students participating in experiential learning were able to apply and better understand didactic learning.

The reflection process and group planning after the sessions were invaluable to teaching reflective practice. Reflective debriefing is a means to help students translate didactic learning to practice through the student's better understanding of the patient's situation, improved self-efficacy, and problem solving (Al Sabei & Lasater, 2016). After reflection, the students realized the importance of the person factors, environment and context and adjusted the physical, social, and psychological environment to improve future sessions.

Providing optimal experiential learning opportunities takes time and is dependent upon experienced guidance for the students. Instructors were fortunate to have a small group of students and breast cancer survivors for this experiential opportunity. However, measures of student outcomes were limited. Despite initially planning for periodically collecting student input, time constraints limited their collection. Although students voluntarily attended a focus group after the class was finished, all but one of them received a grade for the course from their instructors.

Implications for Occupational Therapy Education

The profession has chosen dual entry including an entry-level doctorate with a required Capstone Experience and new Level I fieldwork accreditation standards for all entry level degrees. These changes provide opportunities to incorporate more experiential learning through simulation and community outreach for a deeper level of knowing. The use of experiential learning theory and self-regulated learning can be used successfully in the learning shift. Student outcomes need to be measured to establish whether positive results, such as we perceived, can be objectified. Faculty may benefit by reading manuscripts such as this one exemplifying how to employ theory in experiential opportunities and/or through continuing education courses on this topic.

Conclusion

This paper illustrated how a community-based activity for occupational therapy students can be structured to incorporate the experiential learning cycle and self-regulated learning within occupational therapy curriculum. Kolb's (1984) experiential learning theory and self-regulated learning as a guide can provide a meaningful, transformational experience. Incorporating thoughtful learning activities, facilitating instruction, feedback, and clinical reasoning can encourage reflective practice in our students.

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