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# Instructional Strategies Used to Improve Students' Comfort and Skill in Addressing the Occupational Therapy Process

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**Abstract**

The purpose of this study was to investigate the effectiveness of an intentional blending of instructional strategies in an occupational therapy (OT) entry-level master's course. The OT Adult Practice course uses case-based instructional strategies, clinical skills labs, and standardized patient experiences in a dovetailed approach across three progressively complex clinical scenarios involving adult clients. The course is designed to support students in addressing the entire OT Process. Results of quantitative data analysis indicated that the sequential application of case-based instructional strategies, lab experiences, and standardized patient learning opportunities significantly improved students' self-perception of their level of comfort and skill in being able to perform the following components of the OT process for adult clients: occupational profile, OT evaluation, developing an OT treatment plan, implementing OT treatment, and planning for discharge.

**Keywords:** OT education**,** OT process**,** fieldwork preparation, **s**tandardized patients, case-based instruction, adult learning

## 1. Introduction

The purpose of an occupational therapy (OT) program is to graduate effective and competent entry-level practitioners (Avi-Itzhak & Krauss, 2010; Burke & Harvison, 2014). The ability to apply knowledge and skills throughout all phases of the OT Process (AOTA, 2014; AOTA, 2008) is a key competency expected of all graduates. In fact, accreditation requirements for entry-level master's programs include compliance with 46 standards explicitly related to understanding and enacting the OT Process (ACOTE, 2012). Thus, educators must select instructional strategies that best prepare students to practice and develop confidence in using their clinical reasoning and psychomotor skills to safely and effectively work with clients (Burke & Harvison, 2014). Unfortunately, there is limited evidence specific to OT education which investigates the effectiveness of using key educational methods to address targeted educational outcomes. This may be related to the fact that currently there is no distinct educational journal in the field of OT which specifically addresses the scholarship of teaching and learning.

The OT Process is a framework for occupational therapy service delivery across a variety of practice settings. It is a three-phase process that begins with evaluation, proceeds to planning for and providing implementation for interventions, and concludes with monitoring outcomes (AOTA, 2014). Practitioners, as outlined in the OT Process, are responsible for completing an occupational profile and OT evaluation, developing and implementing a treatment plan, and using outcomes to monitor progress and plan for discharge (AOTA, 2014; AOTA, 2008). From start to finish, the process provides OT practitioners with a mechanism for turning occupation into therapy (Boyt Schell, Scaffa, Gillen, & Cohn, 2014). Although it is portrayed as a linear, stepwise process, it is important for students to understand that the OT Process is clinically recursive, as aspects of evaluation, intervention, and outcomes interact in an ongoing and continuous manner.

In the final didactic quarter of an OT master's program, the authors of this article teach OT Adult Practice, a synthesis course designed to bridge didactic experiences with more hands-on opportunities. This course is based on three progressively complex clinical cases that emphasize different components of the OT Process and adult practice settings. For each case scenario, students are required to participate in an initial small group, case-based discussion. During the discussion, students identify clinical skills germane to the case and practice them in a skills training lab following the

case based discussion. Lastly, students have the opportunity to apply their knowledge and skills to a standardized patient experience based on the details of the case. These educational experiences provide opportunities for students to research and apply evidence, as well as integrate their previous knowledge and skills to ultimately hone their OT clinical practice skills. Upon completion of the course, all students have to successfully addresse all components of the OT Process.

The aim of this study was to review the effects of blending multiple instructional techniques in a synthesis course in the final quarter of an entry-level master's OT program. More specifically, this study addressed the impact of case-based instructional strategies, skills training labs, and standardized patient experiences on students' self-perception of comfort and skill in completing key components of the OT Process. One hypothesis of this study is the use case-based instructional strategies, skills training labs, and standardized patient experiences will significantly increase students' perceived level of comfort in performance of keys aspects of the OT Process. The second hypothesis of this study is the use case-based instructional strategies, skills training labs, and standardized patient experiences will significantly increase students' perception of their level of skill in performance of keys aspects of the OT Process.

## 2. Theoretical Framework

According to Knowles (1970, 1990), a pioneer in adult learning theory, optimal learning occurs when adults are self-directed and actively engaged in the learning process. Knowles (1970, 1990) also emphasized that students benefit when the learning experiences are relevant, goal oriented, and experientially based. Additionally, he asserted that learning should be context-related and practice-specific in order to effectively integrate and apply knowledge (Knowles, 1970, 1990). Similarly, Beckert, Wilkinson, & Sainsbury (2003) and Waskiewicz (2001) found adult learning to be most efficacious when it is applied to practical experiences. The intentional use of case based instructional strategies, clinical skills labs, and standardized patient encounters is consistent with the principles of andragogy and appear to be natural strategies for applying the principles of adult learning theory. Moreover, this instructional approach which blends these techniques is consistent with suggestions to integrate multiple instructional methods in curricula and courses (Shatzer, 1998; O'Brien & McNeil, 2013).

## 3. Review of the Literature

### *3.1 Case-Based Instruction*

Case-based pedagogy uses a case or problem to facilitate learning. Instructional cases are often designed to build upon previous knowledge and enable students to actively apply knowledge in order to address the learning objectives related to the intricacies of the case (Williams, 2005). Unlike lectures, cases encourage students to adopt an active and self-directed learning process. Case-based instruction has been used as a stand-alone strategy as well as a complement to lecture-based teaching. Various academic disciplines such as law, business, education, and medicine, utilize cases to develop applied and higher level reasoning skills (Kim et al., 2006; Mayo, 2002).

With respect to health and allied health professional education, Thistlethwaite et al. (2012) proposed that the use of realistic cases that help students apply knowledge and connect theory in practice may be an effective method to prepare students for clinical practice. Kim et al. (2006) described how cases support learners to build upon previous knowledge and encourage them to prioritize information, search for evidence, synthesize data, and make clinical decisions. The use of strategically designed clinical cases was also found to promote students' confidence in their clinical reasoning and OT related skills (Knecht-Sabres, Kovic, Wallingford, & St. Amand, 2013).

### *3.2 Lab-based Learning*

Lab instruction has a long history in the natural sciences and science education. Lab practicums are often used to help students better understand complex and abstract information that is difficult to portray in lectures alone (Bayrak, Kanli, & Kandil-Ingec, 2006). For pre-service health care professionals, lab experiences provide hands-on opportunities to apply learning to clinical settings and to hasten familiarity with using clinical instruments, administering assessments, and psychomotor skills needed to safely and effectively work with clients (Fell, Borland, & Lynne, 2012). Furthermore, lab-based learning experiences support the development of psychomotor practice competencies because the learning environment is controlled and students can benefit from observing others, feedback, developing a mental image of correct performance, and rote practice (Snyder, Fitzloff, Fiedler, & Lamke, 2000).

### *3.3 Standardized Patients*

There are many different ways to define and describe standardized patients. Barrows (1993) led the way for the use of standardized patients in medical schools. He recognized two distinct types of standardized patients: (1) a person highly trained to simulate a patient's illness in a standardized manner; and (2) an actual patient who is trained to present his or her own illness in a standardized manner. Whereas, Giles, Carson, Breland, Coker-Bolt, and Bowman (2014) used the term simulated patient, versus standardized patient, and defined a simulated patient as "a healthy person who is trained to play the part of a patient in a standardized way for educational purposes" (p.58). Moreover, Bradley (2006) and

Rosen (2008) expanded the use of standardized patients by acknowledging that standardized patients may involve people trained to play roles of patients, family members, or others.

Giles et al. (2014) collected and analyzed data regarding the use of simulation in OT academic programs. Their findings indicated that simulation, including, but not limited to the use of standardized patients, was used to develop: clinical reasoning, problem solving, and decision making skills; OT evaluation, intervention and treatment planning skills; communication skills; the ability to interact with clients; and therapeutic use of self. Ryan et al. (2010) highlighted the benefits of simulation prior to experiencing the complexity of "real" patients. In fact, they asserted that allowing students to make mistakes in a non-threatening environment and allowing students to correct their mistakes, enhance learning which, ultimately, results in students being better prepared to meet the challenges of clinical practice.

Velde, Lane, and Clay (2009) provided preliminary evidence that the use of standardized patients enhanced OT students' self -perception of their ability to effectively interview clients. Similarly, Herge et al. (2013) provided favorable evidence to suggest that the use of standardized patients can be beneficial in enhancing OT students' self- perception of their ability to perform an OT evaluation. However, no studies except for a pilot study of students' perception of readiness for clinical practice (Knecht-Sabres, Kovic, Wallingford, & St. Amand, 2013) were found that investigated students' comfort and skill related to completing the entire OT process (occupational profile, OT evaluation, developing an OT treatment plan, implementing OT treatment, and planning for discharge). Furthermore, after a review of the literature, there also did not appear to be any studies which examined the students' ability to address the needs of adult clients across the continuum of care in a variety of clinical settings (acute care, in-patient rehabilitation, and a skilled nursing facility).

## 4. Description of Course Design and Instructional Methods

The structure and design of the OT Adult Practice course is based on an intentional blending of case-based instructional strategies, clinical skills labs, and standardized patient experiences which targeted integration of key knowledge and skills related to the OT Process. The current OT Adult Practice course meets specific ACOTE standards and objectives. However, the content and instructional methods were developed after (1) collaborating with academic fieldwork coordinators to determine specific skills which would enhance readiness for Level II OT fieldwork; (2) analyzing results of the OT Knowledge exam, which indicated that students were performing lower on the intervention section of the exam; and, (3) results from the Domains of Practice Exam, which revealed that students had more challenges on questions in Domain III (intervention). Since this course is in the final didactic quarter prior to Level II Fieldwork, the instructional methods were chosen to not only support the application and synthesis of information from previous courses and ongoing coursework but to also support comfort and confidence in enacting the OT Process with adult clients in a variety of different clinical settings and within the usual time demands of clinical practice.

The OT Adult Practice course consisted of 3 sequentially complex cases which built upon each other and provided students with exposure to clients from the time of initial referral to discharge in different practice settings (acute care, in-patient rehabilitation, and sub-acute care). Each case was structured to emphasize different aspects of the OT Process across the continuum of care to provide the opportunity for students to apply and generalize knowledge of the various aspects of the OT Process in many different practice contexts. Additionally, the structure and learning objectives of the cases were designed so that students would become increasingly more self-directed in achieving learning outcomes. Refer to Table 1 for a specific breakdown of how these instructional strategies were applied in each case and what aspects of the OT Process were emphasized.

Table 1. Overview of Adult Practice Course

| Scenario 1: Acute Care | Scenario 2: Inpatient Rehab | Scenario 3: Sub-acute Rehab |
|---|---|---|
| Case-Based Instruction: discuss the case to determine missing part of occupational profile and OT evaluation | Case-Based Instruction: discuss interventions that would be appropriate based on most recent OT report and setting; discuss appropriate OT goals | Case-Based Instruction: discuss discharge process; discuss clinical decisions that impact discharge process; discuss strategies and procedures for providing discharge recommendations |
| Clinical Skills Lab Practicum: practice interviewing skills for occupational profile and skills needed to complete missing parts of the OT evaluation (i.e., upper extremity range of motion and manual muscle testing) | Clinical Skills Lab Practicum: practice goal writing skills; practice transfers involving IV poles and catheters; practice designing an intervention plan for an afternoon therapy session | Clinical Skills Lab Practicum: practice instructing on the use of adaptive equipment and durable medical equipment; practice performing shower, toilet, and car transfers while maintaining weight-bearing and movement precautions; practice providing instruction to clients and clients' family members |
| Standardized Patient Experience: complete an occupational profile and missing part of the OT evaluation with SP | Standardized Patient Experience: implement an intervention with SP during an afternoon therapy session; adjust approach and grade intervention appropriately based on SP's response and performance | Standardized Patient Experience: complete transfers with SP and family member; instruct family member and client on safe technique; assess family member's ability to safely assist client with transfers; provide client and family member with discharge recommendations; provide client and family member with education on adaptive equipment and durable medical equipment |
| OT Process Emphasized: occupational profile and OT evaluation | OT Process Emphasized: Intervention Planning and Intervention Implementation | OT Process Emphasized: outcomes evaluation to inform discharge planning |

This table represents the structural design of OT Adult Practice course. It highlights the intentional blending of case-based instructional strategies, clinical skills labs, and standardized patient experiences and depicts which part of the OT Process was emphasized.

## 5. Research Methods

### *5.1 Research Design*

A pre-test/post-test design was used to determine if there was a significant improvement in the OT students' self-perception of their level of comfort and skill regarding their ability to perform the following components of the OT Process: creating an occupational profile, completing an OT evaluation, developing an OT treatment plan, implementing an OT treatment plan, and reviewing outcomes to plan for discharge. This study was approved by the University's Institutional Review Board.

### *5.2 Participants*

A total of 38 second year OT Master's students from a university in the Midwest participated in this study. All students participated in the Adult Practice course. Ninety-five of the participants were female and 5% were male. The mean age of this cohort was 25, with an age range of 21-54. Eighty-four percent of the participants were Caucasian, with the remaining 16% consisting of African American (5%), Hispanic (5%), Asian (3%), and Other (3%) students. After the completion of the Adult Practice course, as well as the rest of the courses in the students' final quarter of their didactic education, all students were placed in at least one adult physical disabilities Level II Fieldwork rotation before graduating.

### *5.3 Instrumentation*

The pre-test/post-test instrument is a 10-item questionnaire that specifically addressed students' self -perception of their comfort and skill related to performing key aspects of the OT Process. The items used in this questionnaire were part of a questionnaire that was developed by three out of four of the current authors (Knecht-Sabres, Kovic, Wallingford, & St. Amand, 2013). The 10 items targeted in this study specifically addressed the OT Process for examination with a new cohort of students who were enrolled in this course (see Appendix I). The original instrument was designed to measure students' perceptions of their comfort and skill on key OT competency items related to their ability to perform psychomotor skills, clinical reasoning skills, and various aspects of the OT process, in preparation for fieldwork.

The instrument was developed by the researchers after comprehensive review of the literature found that there did not appear to be a valid standardized questionnaire that measured these constructs. The content of the instrument was

constructed based on program evaluation data related to the needs of fieldwork preparation, feedback from the Program Advisory Council, academic fieldwork coordinators, and a review of the professional literature. Furthermore, the items on the pre/post-test assessment were triangulated with the literature, including the AOTA Fieldwork Performance Evaluation (2002) and the AOTA OT Practice Framework 2nd Edition (2008), ensuring that the selected items represented basic, but essential, competencies required of OT practitioners for adult clients who are experiencing occupational performance issues due to physical limitations. Three of the four of the investigators were initially involved in the development of the instrument and independently determined that the content of the instrument would provide insights into the students' self-perceptions of confidence and skill related to the proposed learning outcomes of the course.

The cohort of students in this study rated both their level of comfort and skill for each of the 10 items on a 7-point visual analog scale which ranged from 1-7. On this scale, a rating of 1 indicated lowest level of comfort or skill; whereas, a rating of 7 indicated highest level of comfort or skill related to the OT Process required for fieldwork and entry-level practice. It was determined that a 7- point scale range would most accurately and effectively capture student responses.

*5.4 Procedure*

Quantitative data was collected from the OT students at the beginning and upon completion of the OT Adult Practice course. The data consisted of a pre-test self-evaluation at the beginning of the OT Adult Practice course and a post-test self-evaluation at the completion of the class. Self-evaluations were provided in hard copy form. The identity of the participants remained anonymous. The forms were collected and analyzed by a non-biased reviewer. Individual student data was not analyzed; rather all of the pre-test and post-test self-evaluations were combined to form an aggregate to further ensure anonymity of the students.

## 6. Data Analysis

A paired sample t-test was used to identify differences in mean scores before and after the OT Adult Practice course. More specifically, The Statistical Package for Social Scientists (SPSS) Version 19.0 (IBM Corporation, Armonk, NY) was used to compare a sample t-test to determine if there were significant differences between pre and post- test mean scores for each of the 10 items on the evaluation for (see Table 2).

Table 2. Statistical Results of Pre/Post-Test (n = 38) df = 35, * $p \leq .01$, ** $p \leq .001$

| Items | Pretest M (SD) | Post-test M (SD) | t-value | p-value |
|---|---|---|---|---|
| Occupational Profile: Comfort | 5.66 (.938) | 6.21 (.843) | -3.08 | .004* |
| Occupational Profile: Skill | 5.60 (.916) | 6.16 (.789) | -3.22 | .003* |
| Full OT Evaluation: Comfort | 4.26 (1.03) | 5.29 (.867) | -6.50 | .000** |
| Full OT Evaluation: Skill | 4.42 (1.08) | 5.39 (.823) | -5.85 | .000** |
| Dev. Tx. Plan: Comfort | 4.47 (1.16) | 5.26 (.760) | -4.09 | .000** |
| Dev. Tx. Plan: Skill | 4.58 (1.20) | 5.32 (.775) | -3.71 | .001** |
| Implement Tx. Plan: Comfort | 4.32 (1.04) | 5.37 (.883) | -6.41 | .000** |
| Implement Tx. Plan: Skill | 4.39 (1.05) | 5.39 (.916) | -5.65 | 000** |
| Discharge Planning: Comfort | 3.68 (1.38) | 5.00 (.986) | -7.23 | .000** |
| Discharge Planning: Skill | 3.74 (1.31) | 5.10 (.924) | -7.20 | .000** |

This table represents the differences in mean scores on the 10-item questionnaire used to assess students' self-perception of their comfort and skill related to performing key aspects of the OT Process.

## 7. Results

The quantitative data analysis revealed that there were significant statistical differences on all five of the OT Process items designed to measure self-perception of level of comfort. Likewise, significant statistical differences were noted on all five of the OT Process items designed to measure self-perception of level skill (see Table 2). More specifically, quantitative findings indicated the blending of case-based instructional strategies, clinical skills labs, and standardized patient experiences may have supported improvements in students' self-perception of their comfort and skill in being able to perform the following components of the OT process for adult clients: occupational profile, OT evaluation, developing an OT treatment plan, implementing OT treatment, and planning for discharge.

## 8. Discussion

Case-based instructional strategies, clinical skills labs, and standardized patient experiences are often used instructionally to prepare OT students to practice clinical skills in an error-forgiving environment, develop clinical and professional reasoning, provide hands-on experiences, and to prepare for fieldwork experiences. There is little professional evidence, however, to guide OT faculty in selecting teaching methods that best support OT's unique

clinical skill development (Burke & Harvison, 2014). This article addresses this gap by providing evidence for a pedagogical model that used cases, lab opportunities, and standardized patients to increase students' comfort and skill with addressing all components of the OT Process with adult clients. The results of this study substantiate the findings of a similar pilot study (Knecht-Sabres, Kovic, Wallingford, & St. Amand, 2013) that examined the OT students' perception of their level of preparation for clinical practice on key OT related competencies and skills.

These findings support the premise that a variety of instructional strategies are needed for OT students to accurately prioritize clinical information and competently address the complexities and ambiguities that are inherent in providing care (Shatzer, 1998; O'Brien & McNeil, 2013). Skillful synthesis of information and informed decision-making are dependent, in a large part, on the extent to which students' didactic training facilitated the integration and application of learning across courses. Student outcomes in this study suggest that the blend of cases, labs, and standardized patient experiences provided effective opportunities to conceptually connect distinct components of the OT Process and to refine essential entry-level clinical skills across cases.

The results also support the use of Adult Learning Theory as a design framework for clinical courses that attempt to bridge didactic instruction with clinical practice. Case-based instructional strategies, clinical skills labs, and standardized patient experiences approximate real world clinical encounters yet still provide flexibility for students to learn from mistakes and to become more comfortable and confident in providing care. Moreover, the instructional strategies used in the OT Adult Practice course align with Knowles' (1970, 1990) conceptualization of Adult Learning Theory because students can be encouraged to adopt a self-directed approach, take an active role in the learning process while their experiences are tailored so that these learning opportunities remain timely, relevant, goal oriented, and experientially based.

## 9. Delimitations

A limitation of this study is that it did not specifically examine whether OT students perceived that the instructional methods used in this adult practice course were directly linked to their increased comfort and skills on key aspects of the OT Process. Although the findings of this study revealed that students' self- perceptions of their level of comfort and skill on aspects of performing the OT Process significantly increased after participating in the Adult Practice course, the results may also have been influenced by other factors. For example, findings may have been influenced by other courses the OT students were taking during the same quarter as the OT Adult Practice course. Additionally, the improvements may have been related to the culmination of the OT students overall educational experiences.

## 10. Conclusion

Signature pedagogies are the characteristic forms of teaching and learning that are used to socialize learners into the profession (Schaber 2014). Signature pedagogies are often interactive and support deep learning and reflection. As OT educators begin to explore the outcomes of particular teaching and learning strategies, it is possible that the profession will be able to better identify its signature pedagogies. This study found that a combination of case-based instructional strategies, clinical skills labs, and standardized patient experiences to be very helpful in targeting entry-level competencies related to addressing the OT Process with the adult client. Because this study showed statistically significant changes in comfort and skill with core aspects of providing skilled OT services, educators looking to more effectively bridge classroom learning with expectations in the clinic may want to consider these instructional strategies. Future studies of instructional methods may want to examine both students' perceptions of performance as well as their perceptions of the effectiveness of the instructional methods.

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## Appendix I

As this relates to any setting in adult practice, please rate your ability to perform the following:

(1=lowest, 7=highest)

| | Comfort level (1-7) | Skill level (1-7) |
|---|---|---|
| Occupational profile | | |
| Full OT evaluation | | |
| Treatment plan development | | |
| Treatment Plan implementation | | |
| Discharge planning | | |