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## Preparing Occupational Therapy Students for the Complexities of Clinical Practice

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# Preparing Occupational Therapy Students for the Complexities of Clinical Practice

## **Abstract**

This paper examined the effect of a unique amalgam of adult learning methodologies near the end of the occupational therapy (OT) students' didactic education as a means to enhance readiness for clinical practice. Results of quantitative and qualitative data analysis indicated that the use of standardized patients, in combination with a sequential, semistructured, and progressively challenging series of client cases, in an OT adult practice (intervention) course, improved the students' self-perception of their level of comfort and skill on various foundational, yet essential, OT-related competencies.

## **Keywords**

OT Education, Standardized Patients, Case-Based Learning, Clinical Reasoning, Psychomotor Skills, Fieldwork Preparation

## **Credentials Display**

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Adult learning theory asserts that students require context-related and practice-specific learning to integrate and apply knowledge effectively (Knowles, 1970, 1990). Numerous researchers have provided evidence that these types of learning experiences are key not only to understanding course content but also to developing many of the skills and behaviors necessary for fieldwork and clinical practice (Lindstrom-Hazel & West-Frasier, 2004; May, Park, & Lee, 2009; McCannon, Robertson, Caldwell, Juwah, & Elfessi, 2005; Reeves et al., 2004). Professional occupational therapy (OT) programs prepare students for practice through didactic course work, experiential learning opportunities, and fieldwork. Since OT students in level II fieldwork are expected to handle the complexities of OT practice at the beginning of their clinical rotation (Lindstrom-Hazel & West-Frasier, 2004), many OT academic programs have modified their curricula to better prepare their students to address the current demands of fieldwork and clinical practice.

This paper discusses how a master's of occupational therapy degree program in the Midwest modified components of one of its courses within its curriculum in order to address more effectively the needs of its adult learners and to enhance the students' readiness for clinical practice. Initial interest in and exploration of the best way to prepare students for fieldwork and clinical practice emerged from the findings of program evaluation data. Researchers collected the program evaluation data from multiple sources (i.e., course evaluations; fieldwork evaluations; and feedback from students, fieldwork educators, and program advisory board

members). This data suggested that students were experiencing challenges in three areas: (a) critically thinking and responding "in the moment", (b) engaging in the hands-on applications of specific technical skills, and (c) effectively adjusting to the fast pace and complexity of clinical practice, especially in acute care settings.

Further analysis revealed that the demands of fieldwork and current practice involved many challenges related to time constraints, productivity, and myriad other factors. Moreover, many fieldwork sites expected students to begin their rotations with foundational skills, knowledge, and experiences, and to be ready to "hit the ground running" (Lindstrom-Hazel & West-Frasier, 2004). Thus, the researchers implemented modifications to the instructional methodology of an adult practice course to respond to the program evaluation findings and to enhance students' preparation for the complexities of fieldwork and clinical practice.

The adult practice course is a synthesis course, which is situated in the final quarter of the students' didactic education, before they embark on 24 weeks of fieldwork (clinical practice that is supervised by a clinical educator). This course addressed the OT process (including evaluation and intervention) within a closely simulated contextual setting. As a result of program evaluation data, adult learning strategies were more thoroughly integrated into this course as means to enhance the students' level of confidence and skills on various foundational, yet essential, OT-related competencies. The modifications to this course included the use of standardized patients (SPs) and a series of complex and progressively challenging

cases, with the ultimate intention of enhancing clinical reasoning skills and overall readiness for clinical practice.

In order to assess whether students felt prepared for fieldwork, the researchers identified 13 key competency areas and developed an instrument to assess students' perceptions of their comfort and skill. Thus, the purpose of this study was to determine if the use of adult learning strategies (Knowles, 1970, 1990) improved students' self-perception of the students' level of comfort and skill in key competencies for entry-level practice.

### **Adult Learning**

According to Knowles (1970, 1990), the pioneer of adult learning theory, there are several key assumptions about the characteristics of adult learners, two of which are: (a) that adults are self-directed and need to take an active role in the learning process and (b) that adults learn best when their learning experiences are relevant, goal oriented, and experientially based. Research has shown that adult learning is most effective when it is applied to practical experiences (Beckert, Wilkinson, & Sainsbury, 2003; Waskiewicz, 2001). David and Patel (1995) noted that adults become ready to learn when they experience a need to know or when they feel they need to do something. Likewise, they asserted that adults learn more effectively when the learning process is more problem centered and oriented to life rather than when learning is solely centered on the subject matter. However, as David and Patel highlighted, adult learners require help in making the transition from being dependent learners (as is typical in most

educational arenas) to becoming self-directed learners.

Additionally, the evidence suggested that experiencing a need in their life motivates adults. In other words, adults are internally motivated to learn (e.g., motivated to learn for reasons related to self-esteem, recognition, and greater self-confidence) and are less influenced by external motivators (e.g., pressures from teachers and competition for grades) (David & Patel, 1995). The instructional methodologies in the adult practice course (e.g., SPs and case-based discussions) were chosen to facilitate students' internal drive to learn and excel. The health care literature supports the use of SPs as an effective means to hone clinical skills (Ryan et al., 2010).

### **Standardized Patients (SPs)**

Barrows (1993), one of the pioneers in the use of SPs in medical schools, defined standardized patient as an umbrella term for both a simulated patient (a well person trained to simulate a patient's illness in a standardized way) and an actual patient (who is trained to present his or her own illness in a standardized way). May et al. (2009) defined a SP as a healthy person who has been carefully coached to portray accurately the characteristics of a specific patient, with the standardization relating to the consistency in the challenge that the patient offers the learner. Whereas, Zraik (2012) defined a SP as a person who is trained to portray a patient scenario, or an actual patient using their own history and physical exam findings, for the instruction, assessment, or practice of communication and/or examining skills of a health care provider.

Teaching communication and clinical skills is the most common use of SPs (May et al., 2009). The majority of studies on the use of SPs have reported changes in the knowledge, skills, and/or attitudes of the learners (May et al., 2009). Ryan et al. (2010) highlighted the benefits of training through simulation scenarios, prior to experiencing the complexity of “real” patients. In fact, they noted how allowing students to work in a “mistake-forgiving” environment allows the students to make mistakes in a nonthreatening environment, to correct his or her mistakes, to learn from these experiences, and, ultimately, to prepare better to meet the challenges of clinical practice.

The use of SPs and problem/case-based learning activities have been found to be effective methods to enhance the students' readiness for clinical practice, including, but not limited to, developing the students' level of confidence, their ability to provide client-centered care, and their ability to accept, absorb, and apply constructive feedback to improve performance (Lindstrom-Hazel & West-Frasier, 2004; May et al., 2009; McCannon et al., 2005; Reeves et al., 2004). Findings from Hoellein, Griffith, Lineberry, Wilson, and Haist (2009) indicated that focused instruction using SPs results in better interpersonal and clinical skills as well as greater knowledge. Therefore, the ultimate intent for using SPs in didactic education is to contribute to the students' preparation for clinical practice.

### **Readiness for Clinical Practice/Competency**

The purpose of an OT program is to graduate effective and competent entry-level practitioners (Avi-Itzhak & Krauss, 2010). Thus, in

order to achieve this outcome, OT programs need to develop successfully all of the necessary skills required for fieldwork and entry-level practice in the didactic portion of the educational process (Jedlicka, Mosley, Jaffe, & Kassner, 2004). The process of moving students from a basic understanding of theoretical information to an advanced application of one's knowledge requires graded instruction and feedback, the selection of appropriate teaching methods, and learning opportunities which encourage sound independent decision making (Lysaght & Bent, 2005). In fact, Ngai (2006) asserted that effective pedagogical approaches must include the integration of active, hands-on, experiential learning within the intellectual rigor of the academic classroom. Unfortunately, many OT students believe that the academic portion of their curriculum contains insufficient “hands-on” experience to prepare them adequately for level II fieldwork and entry-level practice (James, 2001).

Yet, Mattingly & Fleming (1994) suggested that fieldwork education (a) exposes students to the culture of the profession, (b) promotes the development of professional reasoning, and (c) refines clinical skills through the provision of appropriate and supervised interventions. Costa (2004) further validates the link among coursework, fieldwork, and entry-level practice. In fact, Costa asserts that fieldwork “is the missing link between education and practice” (p. xiii). More specifically, she describes how fieldwork is the “real” in which students learn how to implement the OT process, and, ultimately, to enable their patients and clients to engage or re-engage in meaningful occupations.

This mismatch between student expectations and the intent of the didactic portion of entry-level clinical education may not always prepare students to be effective fieldwork students and future clinicians. Thus, the researchers revised an adult practice course in the curriculum. This course occurred in the quarter immediately before the students embarked on level II fieldwork. The researchers redesigned the course to be more responsive to the needs of adult learners and the complexities of current practice. In particular, this course provided opportunities for students to use sound clinical reasoning and psychomotor skills. More specifically, each case in this course required the students to consider the entire OT process for each clinical case scenario. However, each case scenario also necessitated that the students perform (refine) psychomotor skills for a particular component of the OT process (e.g., conducting an OT evaluation, implementing OT intervention, or training the family prior to discharge).

In addition, students met in small groups with a faculty mentor at least one to two times per clinical case scenario to discuss salient aspects of the case. Students were responsible for: (a) synthesizing all relevant information related to the case, (b) exploring the complexities of the case, (c) applying case-based information to the OT process, (d) offering insights about the patient's situation and conditions, (e) covering thoroughly all learning objectives, (f) integrating information from courses across the curriculum, and (g) providing evidence for their case-based recommendations. Each small group of six or seven students rotated between at least three different faculty mentors to facilitate

their discussion regarding the complexities of the case and to rate their performance throughout the course.

These experiences provided opportunities for the students to be self-directed and to take an active, dynamic role in the learning process. Furthermore, these learning experiences were experientially based, directly related to the OT process, and were simulated to be as close as possible to the "real-life" context with the use of SPs. Additionally, the multiple learning opportunities in this course provided experiences in which the students received graded instruction and feedback, with the intention of improving myriad skills necessary for clinical practice. Also, this model of rotating students between different faculty mentors is similar to fieldwork and clinical practice, where a student may need to be responsive to more than one supervisor and other team members.

## **Methods**

### **Design**

The researchers chose both quantitative and qualitative research methods of data collection and analysis for this study. A convergent parallel mixed methods design (Creswell, 2013) was used to confirm or disconfirm if the quantitative and qualitative sources of data yielded similar results. The utilization of mixed methods allowed the researchers to reap the benefits of both research designs (Corcoran, 2006) and enabled a more complete, accurate, and multifaceted view of the results (Adami, 2005; Bledsoe & Graham, 2005). The university's Institutional Review Board approved this retrospective study.

## Participants

A total of 74 second-year OT graduate level students from a university in the Midwest participated in this study over a 2 year time period, with 37 OT students included in each cohort. For this study, the researchers utilized retrospective quantitative and qualitative data from both of these student cohorts. Both groups of cohorts participated in the same adult practice course using the same instructional methodology. In the first cohort of students (cohort A), 84% of the participants were female and 16% were male. The mean age of this cohort was 24, with an age range of 22 to 42 years. Ninety-two percent of the participants in cohort A were Caucasian, with the remaining 8% consisting of Asian (5%) and Hispanic (3%) students. In the second cohort of students (cohort B), 92% of the participants were female and 8% were male. The mean age of this cohort was 25, with an age range of 22 to 53 years. Eighty-two percent of the participants in cohort B were Caucasian, with the remaining 18% consisting of Asian (10%) and Hispanic (8%) students.

## Instrumentation

The pretest/posttest instrument consisted of a researcher-developed, 13-item questionnaire (see *Appendix*). A comprehensive review of the literature found that there did not appear to be a valid standardized questionnaire that fit the needs of this study. As such, the researchers developed a set of 13 core competencies based on intensive review of professional documents; program evaluation data collected from fieldwork educators, hospitals, and members of the program's advisory council regarding what they determine is expected for level

II fieldwork and entry-level practice; and students' feedback regarding their preparation for fieldwork and entry-level practice. This feedback was combined with key constructs that were explicitly addressed in the didactic curriculum and consideration of the competencies that the profession requires at the completion of fieldwork. The 13 core competencies served as the basis for the questionnaire that was used to obtain the students' self-perceptions. Although the questionnaire was not pilot tested, all four of the investigators independently determined that the content of the instrument would provide insights into the students' self-perceptions of confidence and skill. The 13-item pretest/posttest questionnaire required the students to rate both their perceived level of comfort and their perceived level of skill on various basic, yet essential, OT-related skills required for fieldwork and entry-level practice with adult patients and clients with a physical disability. The students rated their level of both comfort and skill for each of the 13 items on a 7-point Likert scale. Although there is a variety of evidence as to the "best" range to use for the Likert scale, the researchers determined that the 7-point scale would most accurately and effectively capture student responses. On this scale, a rating of 1 indicated the lowest level of comfort or skill and a rating of 7 indicated the highest level of comfort or skill.

Qualitative data was obtained from (a) written feedback received from students' comments on the adult intervention course evaluations and (b) written feedback received from students' comments during and after the completion of fieldwork. This

data was collected in an effort to substantiate the students' ratings.

### Procedure

Retrospective data was collected from both OT student cohorts. The data consisted of a pretest self-evaluation at the beginning of the adult practice course and a posttest self-evaluation at the completion of the adult intervention class. These "evaluations" were provided in hard copy form. The identity of the participants remained anonymous throughout the quantitative data collection process. A non-biased reviewer collected and analyzed the forms. Individual student data was not analyzed; rather, all of the pretest and posttest self-evaluations were combined to form an aggregate. A repeated measures design with a gain score approach (Gliner & Morgan, 2000) and descriptive statistics (measurements of central tendency) were used to analyze the quantitative data.

Qualitative data was gathered from (a) feedback received from the students' comments on the adult practice course evaluations (anonymous, type-written feedback) and (b) feedback received from the students' comments during and post fieldwork (type-written and de-identified comments). Researchers reviewed, coded, and analyzed the qualitative data for common themes. Researchers employed numerous strategies to ensure the trustworthiness of data: triangulation occurred via use of: (a) mixed methods to collect and analyze data, (b) two different methods to collect qualitative data, and (c) validation of results with the existing literature (Denzin & Lincoln, 2005; Patton, 2002).

### Results

The quantitative data analysis revealed that the OT students' self-perception of their level of "comfort" and "skill" on various essential OT entry-level skills improved within each group and between each group for two consecutive years. Descriptive statistics demonstrated that the total mean percentage of change on *level of comfort* improved by 32.0% for cohort A and by 28.2% for cohort B. Likewise, descriptive statistics indicated that the ratings for the students' self-perception of their level of skill improved by 14.67% for cohort A and 27.6% for cohort B. These changes occurred over 9 weeks (from the beginning to the end of the adult practice course). Furthermore, extreme scores on both the low and high values (e.g., ratings for 1's & 2's and ratings for 6's & 7's) were combined for further analysis (Table 1). For instance, at the conclusion of the adult practice course, posttest scores revealed that no students from either cohort rated their level of comfort or their level or skill as a 1 or 2 (indicating a low level of comfort or skill on any of the items).

Analysis of individual items on the pre and posttest assessment revealed that several items had a mean increase in value of at least 2 points on the Likert Scale. Additionally, these items also had an increase of greater than 49%. For cohort A, these items included manual muscle testing (comfort, 52.80% and skill, 62.67%), performing bed to wheelchair transfers (comfort, 50.25% and skill, 59.19%), and clinical reasoning (comfort, 49.42%). For cohort A, tub transfers increased by 68.56% for comfort and 99.01% for skill.



The qualitative analysis of student feedback revealed insights into the course and its outcomes, which showed a positive and favorable response to the instructional methods and perceived outcomes of the course. Participants were in general agreement with the summary of the main themes generated, ensuring the internal validity of findings. The students reported as instrumental to increasing their self-perceived levels of comfort and skills (a) the case-based format, (b) the use of SPs, (c) the active learning process, and (d) the opportunity to problem solve “in the moment.” The statements below represent some of the students’ feedback related to this learning opportunity.

- *I feel that the standardized patient we worked with in our adult practice course was by far the most beneficial experience of our didactic education. It gave us the chance to process our knowledge on the*

*spot, which I believe can only be learned through practice.*

- *The adult practice course has definitely been beneficial to my problem solving and clinical reasoning skills. The “hands-on” experiences and the individualized feedback greatly enhanced my clinical skills.*
- *The adult practice course really did help a lot...the standardized patients helped with treatment ideas, transfers, ROM/MMT, and family trainings...I took what I learned and applied it to fieldwork...I am more comfortable doing things on fieldwork because of this class.*
- *I liked the design of this class...I think the cases and standardized patients were very helpful...it helped me prepare for fieldwork...I think the “hands-on” was extremely beneficial.*

Table 1  
*Self-perception of Comfort and Skill*

**Cohort A**

Pretest Mean Score		Posttest Mean Score		Percentage of Change
Comfort	4.22	Comfort	5.57	32.00%
Skill	4.77	Skill	5.47	14.67%

	Percentage of “6’s” & “7’s”		Percentage of “1’s” & “2’s”	
	Pretest	Posttest	Pretest	Posttest
Comfort	19.04%	60.87%	7.89%	0.00%
Skill	17.92%	63.94%	5.91%	0.00%

**Cohort B**

Pretest Mean Score		Posttest Mean Score		Percentage of Change
Comfort	4.51	Comfort	5.78	28.16%
Skill	4.46	Skill	5.69	27.58%

	Percentage of “6’s” & “7’s”		Percentage of “1’s” & “2’s”	
	Pretest	Posttest	Pretest	Posttest
Comfort	16.92%	50.20%	2.50%	0.00%
Skill	13.24%	46.41%	2.44%	0.00%

## **Discussion**

The results of this exploratory research project suggest that adult learning strategies and experiential methods enhanced students' self-perception of their level of comfort and skill on essential OT-related competencies. More specifically, the use of a series of complex and progressively challenging client cases, the use of SPs, opportunities which foster sound clinical reasoning skills, and the application of the OT process improved students' perception of their clinical reasoning and their level of comfort and skill required for current practice.

The results of quantitative and qualitative data supported the intent of this course. For instance, the data showed an increase in students' perception of their comfort and skill with clinical reasoning and a variety of psychomotor skills (e.g., transfers, manual muscle testing). Students particularly expressed that it was beneficial for them to apply these skills in the moment and in a more realistic context. Furthermore, as a result of the initial ratings on bathtub transfers for cohort A, which the qualitative findings supported, minor curricular revisions were implemented to provide more opportunities to practice this skill earlier in the curriculum. Perhaps, as a result of this change, the pretest scores for cohort B were higher than the pretest scores for cohort A for bathtub transfers (i.e., pretest scores increased from 3.53 to 4.31 for comfort and 3.03 to 5.00 for skill).

Also, when analyzing changes in scores, it is important to consider why some items might have small or large differences between the pre and posttest. For example, there are certain items that

these researchers might expect students to score on the higher end of the scale during the pretest. For instance, at the end of their didactic education, it is likely that the students may highly rate their level of comfort and skill on their ability to do an "occupational profile" (an initial interview which provides the student/practitioner with valuable information in order to establish a treatment plan), since this skill was practiced regularly throughout the curriculum. Thus, it may be appropriate to assume that the pre and posttest changes should be minimal.

In contrast, one might expect other items on the pre and posttest (e.g., goal writing) to be scored on the lower end of the scale. Even though students are exposed to a solid foundation for goal writing throughout the curriculum, there is often much variation in goal writing (e.g., goals are written to address the unique strengths, limitations, and/or interests of each individual patient/client). Thus, goals may vary significantly with each patient, diagnosis, and clinical setting. As a result, the complicated intricacies of goal writing are often further developed and refined when the student is out on fieldwork or working in clinical practice. Consequently, it might be expected that a student would self-report a lower rating for their level of comfort or skill for the goal writing item in comparison to a more basic or less variable item on the pre and posttest (e.g., ability to perform an occupational profile).

These are two examples of where one might expect either small percentage changes or large percentage changes from pre to posttest self-report scores based on the specific skill item. Additionally,

it is important to consider where, in what manner, and how often each competency is addressed within the curriculum. Qualitative data from students regarding their performance ability has also provided valuable feedback about other courses within the curriculum. As such, this has led to broader discussions regarding the curriculum, and, in limited instances, resulted in some curricular revisions and improvements.

Several factors warrant interpreting the results of this exploratory study with caution. First, this study consisted of a small homogeneous sample. Second, there was no control group or comparison. Third, the pre and posttest assessment instrument was not pilot tested.

### **Implications**

Although the findings from this study revealed that the use of SPs and a series of case-based learning opportunities improved the students' self-perception of their level of comfort and skill with many OT-related competencies, further research is recommended to determine if these educational approaches have a positive influence on level II fieldwork performance outcomes. Thus, additional research on students' fieldwork performance outcomes and inclusion of feedback post graduation may provide additional data and insights needed to prepare students for the demands of current practice.

Graduate level academic professional programs need to be responsive to the dynamic and complex requirements of current clinical practice and continue to investigate instructional methods to prepare students more effectively for today's ever-evolving health care environment. This course is

structured such that it has the potential to continue to evolve as the variables that influence health care continue to change. The benefit of the approach utilized in this adult practice course is that course content is directly applied during situational learning opportunities that are as similar as possible to the "real" context. Thus, it provided an opportunity for students to prepare for the complexities of clinical practice and learn from their mistakes in a nonthreatening environment. Additionally, this course focused on students' taking an active role in the learning process (similar to the techniques used in problem-based learning). Thus, part of the intention of this course was to promote life-long learning, utilize evidence, and to better prepare students to conquer the challenges of clinical practice more independently.

The data from this study reflected internal consistency with the course regardless of the faculty involved. Thus, the data suggested that the structure of the course and the learning activities utilized in this course had a positive impact on the students' perceived level of comfort and skill on a variety of OT-related competencies, regardless of the faculty involved. It should be noted, however, that a mentoring process was used to "train" the additional faculty involved in this course.

Last, rigor was maintained throughout the course on multiple levels. Faculty members strived to maintain interrater reliability on various methods of student assessments. Additionally, students received feedback from their peers and from all faculty members involved in the course through a carefully designed process that rotated students among faculty for the small case-based discussion

group sessions, as well as for the assessment of the students' performance with SPs (psychomotor-based assessments). It is likely that this approach and these methods facilitated the positive outcomes observed for the last two cohorts.

### **Conclusion**

The purpose of this study was to determine if adult learning methodologies were effective in enhancing students' perception of readiness for fieldwork and clinical practice. The results of this mixed methods exploratory study indicated that the use of SPs, in combination with a sequential, semistructured, and progressively complex series of client cases, in an OT adult practice course, improved the students' self-perception of their level of comfort and skill on various foundational OT-related competencies.

The outcomes from the adult practice course validate the continued use of adult learning approaches, case-based teaching strategies, and SPs within this course to enhance students' clinical reasoning, confidence, and competence in their knowledge and skills. Additionally, qualitative data from students regarding their performance ability provided valuable feedback about other courses within the curriculum. As such, this has led to broader discussions regarding the curriculum, and, in limited instances, resulted in some curricular revisions and improvements. The aim of the course and the curricular modifications are to continue to enhance students' preparation for the ever-evolving demands and complexities of fieldwork and OT practice.

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Appendix

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)
Complete ROM		
Complete MMT		
Transfers: Bed to wheelchair (tubes, drains, pumps)		
Transfers: Toilet transfers		
Transfers: Tub transfers		
Occupational profile		
Full OT evaluation		
Treatment plan development		
Treatment plan implementation		
Discharge planning		
Goal writing		
Clinical reasoning		
Fieldwork preparation		