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Occupational Therapy Assistant Student Perceptions of Multi-site, Single Site, and Simulated Level I Fieldwork

Abstract

Fieldwork education is the practical application of an occupational therapy education. Level I fieldwork is an important component that introduces students to the clinical setting for basic understanding of client interactions. Quality fieldwork programs in occupational therapy are more difficult to procure than ever before due to critical shortages of placements. Additionally, the COVID-19 pandemic continues to have a major impact on all medical professions. The need for remodeling Level I fieldwork education possibilities has significantly increased. This study compares occupational therapy clinical education across three modalities recognized by the American Occupational Therapy Association (AOTA) standards: a simulated, virtual environment; faculty-led visits to a single clinical site; and supervision by a fieldwork educator across multiple sites. It compares different instructional modes for occupational therapy fieldwork, with the intent to contribute to the body of evidence-based practice in occupational therapy education, before, during, and after the COVID-19 crisis. A survey was administered to measure three cohorts of students' perceptions of their clinical experiences, including occupation-based interventions, engagement with clients, the use of evidence-based practice, exposure to assessments and the influence on skilled therapeutic interventions, the use of effective problem solving for clinical application, and confidence levels to design and implement therapeutic interventions. Data collected from all three cohorts indicated that students largely responded favorably to their clinical experiences, regardless of modality, and provided evidence that modifications may be needed in each experience.

Keywords

Clinical education, simulations, faculty-led, occupational therapy assistant, level I fieldwork

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**Occupational Therapy Assistant Student Perceptions of
Multi-site, Single Site, and Simulated Level I Fieldwork**

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ABSTRACT

Fieldwork education is the practical application of an occupational therapy education. Level I fieldwork is an important component that introduces students to the clinical setting for basic understanding of client interactions. Quality fieldwork programs in occupational therapy are more difficult to procure than ever before due to critical shortages of placements. Additionally, the COVID-19 pandemic continues to have a major impact on all medical professions. The need for remodeling Level I fieldwork education possibilities has significantly increased. This study compares occupational therapy clinical education across three modalities recognized by the American Occupational Therapy Association (AOTA) standards: a simulated, virtual environment; faculty-led visits to a single clinical site; and supervision by a fieldwork educator across multiple sites. It compares different instructional modes for occupational therapy fieldwork, with the intent to contribute to the body of evidence-based practice in occupational therapy education, before, during, and after the COVID-19 crisis. A survey was administered to measure three cohorts of students' perceptions of their clinical experiences, including occupation-based interventions, engagement with clients, the use of evidence-based practice, exposure to assessments and the influence on skilled therapeutic interventions, the use of effective problem solving for clinical application, and confidence levels to design and implement therapeutic interventions. Data collected from all three cohorts indicated that students largely responded favorably to their clinical experiences, regardless of modality, and provided evidence that modifications may be needed in each experience.

Introduction

Fieldwork education is the practical application of an occupational therapy assistant education. It is a critical piece to professional development and competency that links didactic coursework to application in a clinical setting (Brzykcy et al., 2016). The Accreditation Council for Occupational Therapy Education (ACOTE, 2018) Standards define the goal of Level I fieldwork as "to introduce students to the fieldwork experience, to apply knowledge to practice, and to develop understanding of the needs of clients." At this level, fieldwork is not intended to develop independent performance, but to "include experiences designed to enrich didactic coursework through directed observation and participation in selected aspects of the occupational therapy process" (AOTA, 2021a).

Quality fieldwork sites in occupational therapy are more elusive than ever before. Kirke et al. (2007) argued that economic conditions in the early 2000s had already pushed fieldwork education to a crisis point, which was especially evident in the critical shortage of placements. These shortages have been exacerbated by a host of factors on the clinical side, including greater productivity demands on clinicians and shifting employment opportunities for occupational therapists (McBride et al. 2015; Thomas et al., 2007). Shortages in availability are intensified by rising demand for fieldwork placements. The American Occupational Therapy Association (AOTA) recently identified several key factors influencing growing demand including, "an increasing demand for OT services in expanding practice arenas, manpower shortages, increasing numbers of students needing fieldwork placements, [and] students with special needs" (AOTA, 2021c, p.1). These circumstances have contributed to a need to re-evaluate Level I fieldwork education. The purpose of the present study is to identify evidence-based alternatives to conventional modalities of Level I fieldwork in occupational therapy assistant programs.

Literature Review

These crisis conditions were in effect even prior to the global pandemic, which continues to have a major impact on all medical professions and, by extension, medical education. Medical schools have adopted a number of strategies to mitigate transmission of the virus, including the withdrawal of students from clinical placements altogether. Educators and practitioners alike have expressed concerns about the long term implications of removing or lessening clinical education, including its effects on professional practice as well as recruitment and retention within specialized medical fields, such as surgery (Khan & Mian, 2020). Pandemic conditions have also affected physical therapy practice (Robinson et al., 2021). According to the American Physical Therapy Association (APTA; 2020), clinics have had fewer customers which has contributed to rising in unemployment in the field, practice hours declined, and the rate of physician referrals has slowed. These factors place further constraints on student clinical and fieldwork placements.

Alternative Modalities for Level I Fieldwork

Faced with similar challenges, nursing educators have utilized several strategies to find alternatives to clinical education, including the integration of virtual clinical platforms and the development of accelerated programs with lower expectations in terms of direct clinical hours (Dewart et al., 2020). Occupational therapy education continues to adjust and shift as well. AOTA has made it a priority to facilitate timely information and guidance to advocate for and equip occupational therapy practitioners, educators, and students to navigate through difficult circumstances and are using adaptive, creative problem-solving skills to create new opportunities for the field of occupational therapy (AOTA, 2021b). Even prior to COVID-19, AOTA recognized the trend of the decreasing availability of fieldwork placements in occupational therapy education and remodeled Level I fieldwork education possibilities. The 2018 ACOTE standards include a few alternative modalities for occupational therapy Level I fieldwork, including the use of simulated environments, standardized patients, faculty practice, faculty-led site visits, and/or supervision by a fieldwork educator in a practice environment.

Universities and educators have been working to find ways to compensate for fieldwork shortages by exploring these alternative fieldwork models and shifting from traditional one student per supervisor models to other innovative modes (Kirke et al., 2007; Overton et al., 2009). Based on previous experience, desired learning outcomes for alternative Level I fieldwork experiences might include exposure to occupation-based interventions, observation of therapeutic techniques and assessments, application of problem-solving skills and building professional confidence. That said, these alternative modalities are sufficiently new that the evidence base for their effectiveness remains under-developed, a deficit the present study seeks to address.

Student Perceptions of Alternative Level I Fieldwork Modalities

Across higher education, there is a considerable evidence base that affirms that instructional modality significantly influences student learning, and the topic continues to be prevalent across multiple disciplines. Unlike most other disciplines, however, health professions such as occupational therapy assistant programs must contend with the additional modality of clinical instruction, which has also been the subject of considerable attention in the research literature, even prior to COVID-19. Within the field of occupational therapy specifically, a number of scholars have assessed alternative modalities for Level II fieldwork, especially the availability of high-quality simulations (Mattila et al., 2020; Ozelie et al., 2015; Velde et al., 2009). In addition to comparing clinical outcomes across modalities, these studies have suggested that student perceptions of the efficacy of these practices can be integral to their successful implementation.

Compared with Level II fieldwork, there are more limited studies on students' perceptions of the different modalities of Level I fieldwork, and this question has not been the basis of a consistent line of research inquiry. A 2006 study by Johnson et al., for example, found that it had been fifteen years since the different types of Level I fieldwork settings were comprehensively studied. The study served to recognize the need to engage with all stakeholders in the fieldwork experience, especially students. A subsequent study of student perceptions indicated that students valued Level I fieldwork regardless of setting, type of supervisor, and degree of active participation, however, they preferred opportunities to engage in hands-on practice (Ingwersen, 2016). In a more recent study by Nielsen et al. (2017), students participated in an alternative Level I fieldwork experience in which they addressed occupational issues of individuals in the community, communicated with the agency supervisor, and received indirect supervision through in-class discussion. Similar to the previous study, their findings showed that students placed the highest value on classroom activities that were paired with an experiential learning component (Nielsen et al., 2017).

Learning Outcomes for Level I Fieldwork

While there is a wide degree of consensus on the medical content of level I fieldwork, researchers and practitioners have noted gaps in other potentially desirable student outcomes related to their clinical experiences. For example, educators have placed an increased emphasis on using evidence-based practice in clinical practice, however the implementation of evidence into practice continues to be a challenge, especially in terms of consistency. Occupational therapy students report the experience of disconnect between the emphasis on using evidence-based techniques in the classroom and actual application in the clinical setting (Carroll et al., 2017; Rodger et al., 2012). The need for evidence-based teaching strategies parallels larger shifts within the field itself. Although the profession has made progress in becoming an evidence-based profession, further implementation is necessary. There may be a need for strategies to help occupational therapy practitioners shift to using evidence-based practice as both a professional and pedagogical standard. It is also important students have the opportunity to observe and integrate these best-practice strategies during their clinical training (Carroll et al., 2017).

Traditionally, the focus of clinical teaching has been on developing practical skills to ensure competence, however recent research has also placed importance on additional learning outcomes, including life-long learning, communication skills, coping strategies, and, perhaps most importantly, professional confidence (Carrier & Beaudoin, 2020). Professional confidence is "viewed as one of the most important personal factors influencing clinical decision making, because if a clinician believes that he or she has the skills to assess a patient's concerns and that the outcome of this assessment will lead to improved quality for the patient, it is more likely that the clinician will engage" (Holland et al., 2012, p. 1). Evidence-based strategies which contribute to increased confidence include modeling (e.g., watching a supervisor successfully engage in

practice); mastery (e.g., the understanding that with practice comes greater competence); achievement (e.g., scoring favorably with their grades during the actual experience); mentoring (e.g., a positive relationship with their clinical supervisor); and support of peers, effective feedback, competence, and socialization (e.g., being aware of the role of professional identity; Chien et al., 2020; Holland et al., 2012).

The development of alternative fieldwork experiences that facilitate quality learning opportunities, including exposure to occupation-based interventions, evidence-based practice, and affective learning support, would be beneficial for occupational therapy students (Andonian, 2013). The challenge of designing and assessing these alternative models is compounded when the clinical experience is technology-mediated, whether in hybrid or fully virtual form (Drynan et al., 2018). Other health professions have explored the question of evidence-based practice for virtual clinical experiences, especially those conducted through simulations (McGaghie, 2011; Mattila et al., 2020), but the subject remains under-explored for research specifically in occupational therapy education (Bennett et al., 2017; Beck et al., 2018). The current conditions imposed by remote teaching conditions enhance the immediacy of the issue, but even after the pandemic has passed, the need for multi-modal teaching and learning will likely persist (Tabatabai, 2020). The present study compares different instructional modes for occupational therapy assistant fieldwork, with the intent to contribute to the body of evidence-based practice in occupational therapy assistant education, both during and after the COVID-19 crisis. Specifically, the study is intended to provide support for the development of alternative modalities of Level I fieldwork, including consistent practices that positively impact student perceptions of both cognitive and non-cognitive student learning outcomes.

Methods

The present study compared occupational therapy assistant Level I fieldwork across three modalities recognized by ACOTE (2018) standard C.1.9. which states that Level I fieldwork may be met through one or more of the following instructional methods: simulated environments, standardized patients, faculty practice, faculty-led site visits, and supervision by a fieldwork educator in a practice environment. This study compared three fieldwork modalities: Modality 1 was supervision by a fieldwork educator across multiple sites; Modality 2 was faculty-led visits to a single clinical site; and Modality 3 was a simulated, virtual environment. The research question to be explored was how students perceived the effectiveness of three Level I fieldwork modalities in facilitating a range of desired student learning outcomes.

Participants

The students surveyed for the study were all enrolled in a two-year occupational therapy assistant program at the *Pennsylvania State University- Shenango campus*. While specific demographics were not collected as part of the study, the majority of students enrolled in the occupational therapy program at the small campus typically averaged an

age of 26 years old, identified as female, and characterized their race/ethnicity as White/Caucasian. The program primarily served first-generation, at-risk students from the surrounding region, which was experiencing a period of significant economic downturn, circumstances which affected the availability of clinical sites with or without COVID-19 conditions. Students in the program were required to participate in two Level I fieldwork experiences as part of their program curriculum. Modality 2 students had a previous fieldwork experience supervised by a fieldwork educator whereas students in Modality 1 and Modality 3 were not yet exposed to Level I fieldwork prior to the study.

Fieldwork Modalities

The present study compared three different modalities for Level I clinical fieldwork. Each modality was applied during a different semester (Fall 2018, Spring 2019, Fall 2020) with a group of students.

Modality 1: Multi-site with Fieldwork Educator (Fall 2018)

This cohort consisted of sixteen students that were required to complete 12 hours of fieldwork supervised by a fieldwork educator in a practice area with one student at each site. Each student was placed in a different clinical setting with an assigned clinical supervisor from the designated facility. Settings included inpatient, outpatient, skilled nursing, and pediatric facilities. After the completion of the final fieldwork appointment, students submitted a fieldwork log containing diverse topics such as the clinical setting, clients observed, and the completion of an occupational profile comprised of diagnoses, past medical history, and treatment precautions. They included occupations observed, exercise and activities completed, and adaptations required. Students reviewed patient charts, identified long-term and short-term goals, discovered assessments used, and reviewed daily and weekly progress notes. Theoretical models, frame of references, and applied clinical reasoning were identified. Additionally, students completed a self-reflection identifying the utilization of therapeutic use of self and an assessment of the overall experience. Finally, students were evaluated on topics such as therapeutic use of self, ethical behaviors, interactions, problem-solving, and safety awareness.

Modality 2: Faculty-directed Single Site (Spring 2019)

This cohort consisted of sixteen students divided into two groups of eight participating in a faculty-directed experience for ten weeks on an average of 1.25 hours a week at a single clinical site, equaling 12.5 hours of total fieldwork. Students completed standardized assessments and ran therapeutic groups on a special care dementia unit housed in a skilled nursing facility. The students used the *Sensory Connections* program that includes stages of sensory, exercise, and interactive activities (Moore, 2005). Students each had the opportunity to design and lead therapeutic groups for each stage, including the need for upgrading and/or downgrading activities based on client needs. In addition to being in the role as a primary group facilitator, students were actively involved in the group by encouraging client participation and facilitating appropriate techniques. They had an opportunity to assess clients using the Large Allen

Cognitive Level Screening tool, completed documentation on interventions, progress of goals, and discontinuation of services. Students submitted three journal entries with content similar to the Modality 1 fieldwork log, including facility information, analysis of group activities such as occupations, exercises and activities completed, adaptations required, and theoretical approaches and clinical reasoning used. Students also completed a self-reflection at the conclusion of the experience and were evaluated on topics such as therapeutic use of self, ethical behaviors, interactions, problem-solving, and safety awareness.

Modality 3: Simulation (Fall 2020)

This cohort consisted of fifteen students who were required to complete assignments in a simulated, virtual environment that required an average of 1.25 hours a week for 10 weeks, equaling 12.5 hours. Students engaged with case studies through a virtual platform called Simucase. Simucase (2021) utilizes simulation-based learning with a comprehensive patient video library where students can interact with virtual clients to observe, assess, diagnose, and provide interventions. The case studies included videos, reviewing baseline data, “interactions” with other collaborators, the ability to administer assessments, provide interventions/activities, and hold discussions with virtual clients. Students reviewed charts, accessed occupational profiles, identified goals, chose interventions, administered interventions, monitored client progress, and identified adaptations. They also documented treatment sessions, monitored goal progression, and used therapeutic use of self by choosing responses for virtual patients. Students had the opportunity to “interact” with clients in a simulated environment to resemble typical experiences in an actual clinical setting. Additional classroom assignments included creating intervention plans, attending debriefing sessions, and designing an exercise program and family education brochure. Lastly, students completed a self-reflection and fieldwork log similar to the other modalities, with slight modifications.

Data Collection

The clinical instructor chose to develop a survey to measure students’ perception of their clinical experiences, including factors such as occupation-based interventions, engagement with clients, the use of evidence-based practice, exposure to assessments and the influence on skilled therapeutic interventions, the use of effective problem solving for clinical application, and confidence levels to design and implement therapeutic interventions (see Table 1). The survey consisted of six scaled items, using a 7-point Likert scale (strongly disagree, disagree, somewhat disagree, neither agree or disagree, somewhat agree, agree, strongly agree). The instructor applied limited face validity tests, including a student focus group and expert review, and revised the instrument according to their feedback.

Table 1*Occupational Therapy Clinical Experience Student Survey Questions*

1	During this Level I fieldwork experience, I had exposure to clients participating in occupation-based intervention.
2	During this Level I fieldwork experience, I engaged with clients on a 1:1 basis during the therapeutic interventions.
3	During this Level I fieldwork experience, evidenced-based therapeutic interventions were used with clients.
4	During this Level I fieldwork experience, I was exposed to occupational therapy assessments and its influence on skilled therapeutic interventions.
5	During this Level I fieldwork experience, I was required to use effective problem-solving skills for clinical application.
6	Following this Level I fieldwork experience, I feel confident I could independently design and implement therapeutic interventions for clients.

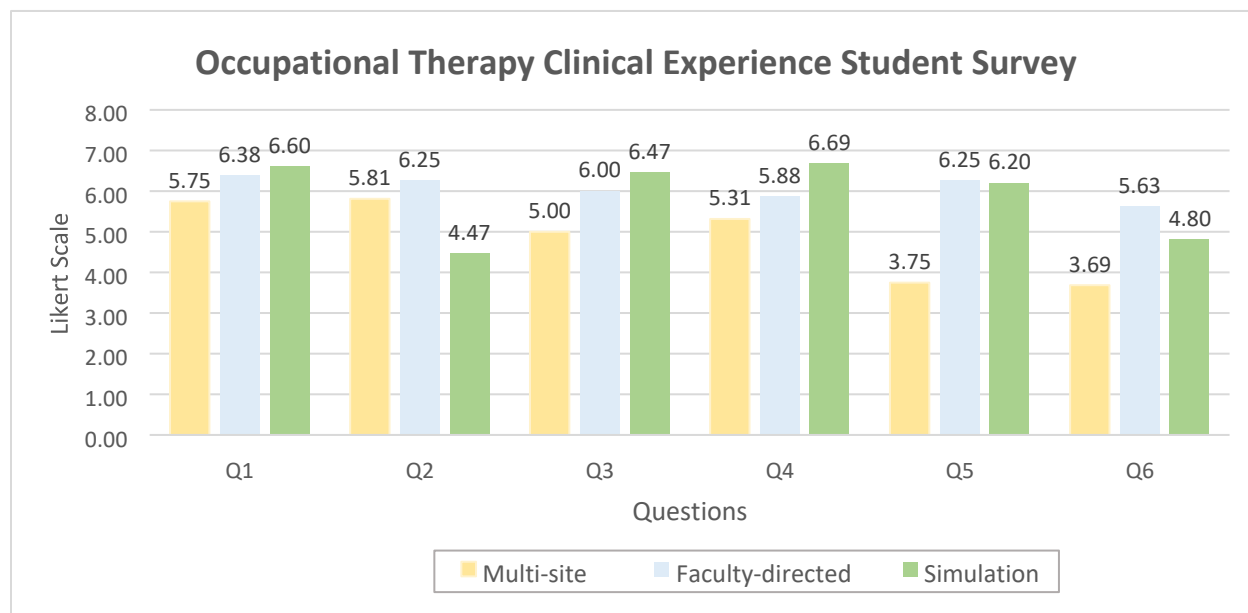
The final, anonymous survey received Institutional Review Board (IRB) approval to be administered during regular class time, using a pencil/paper instrument, following the conclusion of the fieldwork experience. In the Fall of 2020, this procedure was modified for electronic consent. For each semester the results were collected, the student responses served two purposes. First, as formative feedback to the program coordinator, and secondly, as the basis of the present research project that provides a more systematic comparison of student perceptions of the three modalities: multisite/mentored, single-site/faculty-directed, and virtual/simulated.

Results

Data collected from all three cohorts indicated that students largely responded favorably to their Level I clinical experiences, regardless of modality, with an average of 4.2 rating across all questions and cohorts (see Figure 1).

Figure 1

Occupational Therapy Clinical Experience Student Survey (Avg, by Question and Cohort)



Overall, the multi-site modality ranked lowest across all measures, and the simulated and faculty-directed modalities each registered the highest outcomes in three of six constructs. Question (Q) 1 asked students to indicate the degree to which they perceived they had been exposed to clients as part of their fieldwork experience. This question received the highest rankings across all three modalities, but this is perhaps not surprising, given that client interaction is the primary purpose of fieldwork education. That said, Q2, which asked about more involved engagement with these clients, remained at approximately the same level as Q1 for students in either of the face to face settings, but dropped for students working in the simulated environment.

Questions 3 and 4 asked about the content of the fieldwork experience, including experience with evidence based therapeutic interventions (Q3) and assessment (Q4). For both questions, the traditional multi-site fieldwork model ranked slightly lower than the other two modalities, and the simulation experience ranked slightly higher. Questions 5 and 6 asked the students about specific cognitive and metacognitive learning outcomes, including problem solving skills (Q5) and professional confidence (Q6). These items ranked the lowest overall for students in the multi-site modality, and near the lowest for the students in the faculty-directed model. However, the faculty-directed cohort registered the highest perceived confidence (Q6) versus the other two modalities.

Perhaps most interestingly, these constructs include Q2, engagement with clients, which the participating students rated as 4.47 on average, despite the fact that the simulation used only videos rather than human patients. Students reported high gains in confidence from the faculty-directed experience, perhaps a result of prior exposure to a fieldwork experience or due to familiarity with the instructor. However, the perception of confidence was reported higher in the simulated experience versus the multi-site with a fieldwork educator.

Discussion

The overall results suggest that the perception of students at the model in which a fieldwork educator supervised clinical observation across multiple field settings, was lower than the student perceptions from the other two models across five of the six survey constructs. These findings underscore the need to find appropriate alternative models for the fieldwork experience, particularly those that engage students in the kinds of higher order thinking, such as critical thinking and problem solving, required for clinical practice. This modality (multi-site) also ranked low in perceptions of students' confidence, perhaps a reflection of the lack of more direct interaction and hands-on experiences provided by the other two modalities.

Our findings indicated that students clearly perceived that their Level I clinical experience, regardless of modality, contributed to their knowledge of occupation-based interventions, the survey construct that they rated the highest across the board. In this case, however, it should be noted that there may be issues of construct validity with the survey item. Clinical educators (and researchers) make a distinction between occupation-based interventions and other related activities, such as preparatory procedures and non-occupation-based interventions (Lloyd & Gee, 2016), but it is not clear the degree to which the students in this study were aware of these distinctions, as no definition was provided in the survey itself, an issue that will be corrected in future iterations. Taking this limitation into account, the collective responses indicate that the students found their clinical experiences, regardless of modality, contributed to their understanding of the field.

Some issues associated with technology use in education are evident, while others are still emerging. Instructors may be suspicious of new technology use in the classroom without proof of effectiveness. The most frequent criticism of online learning is the absence of vital personal interaction. While technology-mediated education has been the object of considerable skepticism across the academy, these results suggest that the students in the virtual environment perceived the simulated experience to be valuable across three of the six survey constructs, and statistically tied with fourth (Albaugh 1997; Al-Bataineh & Brooks, 2003; Arkorful & Abaidoo, 2015).

The relatively high responses to Q3 and Q4, regarding evidence-based practice and clinical assessments respectively, further supports the possible value of alternative fieldwork options. While the students using simulations ranked the virtual experience high regarding these outcomes, these results indicate students may perceive simulations as an effective means to learn skills necessary that would be used in a clinical setting. More work is needed to build on the relative success of the virtual simulations, integrate the benefits identified in the other two modalities, and find innovative models that will enable students to get the most of their clinical fieldwork experiences.

Limitations

The results and implications of this research should not be overstated. The present study was conducted on a single campus with a relatively small cohort (average of 16 per semester studied) of students, which limits the generalizability of the results. The results also spanned an unprecedented historical time period, a global pandemic, which may also limit the replicability of the student experiences. Finally, the survey instrument used was not a fully validated scale and relied primarily on student perceptions of their experiences rather than direct measures of their learning outcomes. That said, the results are suggestive of changes in future practice and new lines of research in occupational therapy education.

Implications for Occupational Therapy Education

The complexity of the current health care system underscores the need to provide quality clinical experiences to prepare future clinicians for the workplace. Given the constraints that have emerged regarding conventional approaches to clinical education in occupational therapy, there is a growing demand for colleges and universities to restructure these forms of experiential learning without compromising necessary clinical skills (Kirke et al., 2007; Romig et al., 2017).

Historically, Level I fieldwork has been delivered in a manner that provides a hands-on introduction to practice areas and sets the tone for future collaborative relationships. It is often designed for students to actively participate or observe best practices in a clinical setting to enrich student learning (Johnson et al., 2006; Swinehart & Meyers, 1993). In this model, clinical educators serve a critical role in the development of upcoming therapists and are a necessary ACOTE requirement for Level II fieldwork experiences (Ingwersen et al., 2016). As critical as supervisor roles may be, the sacrificial efforts necessary to accommodate students especially in the midst of current healthcare demands, may not be fully sustainable or scalable (Ozelie et al., 2015). Our study presented two viable alternatives to the clinician-driven model, instructor-led and virtual/simulated, either of which have the potential to alleviate some of the significant strains the current system is experiencing. As both of these alternative modalities present stronger perceived gains in higher-order thinking skills (in this study),

suggesting that even if the alternatives are not adopted, it may be beneficial for educational institutions to communicate with clinical supervisors and consider changes in the current curriculum to capture a wider range of occupation-based activities and evidence-based practice for Level I fieldwork.

The study also underscores the potential of faculty-led clinical experiences as a viable alternative to conventional clinician-driven models (Keptner, 2019). The studied model has the advantage of relieving demands on clinicians, while also potentially strengthening university partnerships with local organizations and communities. Students may sacrifice the breadth of their hands-on experiences, as this model is usually designed to focus on one clinical site, but they may be able to make gains in depth, as they are able to spend more time, and gain greater insight, into the functioning of a designated clinical space, while also building their relationship with the faculty member (Delulliis & Saylor, 2021). The benefits of this depth are reflected in our results, in which students ranked this modality as highest in fostering problem-solving skills (Q5) and strengthening professional confidence (Q6). This suggests that classroom educators have the pedagogical knowledge to design clinical experiences that focus on higher order thinking skills; and that there may be opportunities to partner with clinicians to develop new integrative designs for clinical education (Jessee, 2018). These redesign models could also serve as the basis of further educational research; with implications not just for occupational therapy, but also other professions, such as medicine and nursing, for which clinical experiences are integral to their professional socialization and education.

The study further underscores the viability of virtual or simulated options for clinical education. The COVID-19 pandemic may have intensified the need for virtual options (Hayden et al., 2021), but the need to continue to develop these options is likely to continue even after the conditions of the crisis have passed. Virtual options alleviate the demand on clinical sites and clinicians, while also providing more tailored learning experiences for students, as many simulations, like the one used in this study, are intentionally scaffolded to lead students towards mastery; a process that is difficult to mirror in physical clinical settings. There are drawbacks to virtual or simulated learning experiences, and our results affirm other studies of clinical simulations, which indicate that there are inherent trade-offs, with gains in some outcomes (such as mastery) and lower outcomes in others (such as confidence and soft skills) (King et al., 2018; Verkuyll & Mastrilli, 2017). Our findings suggest that there may be ways to rethink the clinical experience across the curriculum, allowing students to engage in multiple modalities in order to capture the benefits of each.

Conclusion

This present study is intended to contribute to a growing body of research and evidence-based practice focused on the modalities of Level I clinical education. Further research is required to compare the learning gained by students in the three fieldwork settings endorsed by ACOTE and how such experiences may influence clinical practice following graduation. To redesign clinical education requires us to ask hard questions about the purpose of clinical education; and what we want students/future health care professionals to gain from working in the field. Indeed, the rise of multiple modalities in health care, e.g. telemedicine, may even ask us to rethink what it means to work in the field. These fundamental shifts in professional practice necessitate parallel changes in how we prepare students to flourish in these environments, which provides a window of opportunity not only to embrace the alternative modalities already supported in the field, but possibly even to imagine new, integrated, multi-modal approaches to clinical education that have not been conceived (yet).

References

- Accreditation Council for Occupational Therapy Education (ACOTE). (2018). Standards and interpretive guide (effective July 31, 2020). *American Journal of Occupational Therapy*, 72(2), 1-83. <https://doi.org/10.5014/ajot.2018.72S217>
- Al-Bataineh, A., & Brooks, L. (2003). Challenges, advantages, and disadvantages of instructional technologies in the community college classroom. *Community College Journal of Research and Practice*, 27(6), 473-484. <https://doi.org/10.1080/713838180>
- Albaugh, P.R. (1999). The role of skepticism in preparing teachers for the implementation of technology. In J. Price, J. Willis, D. Willis, M. Jost, & S. BogerMehall (Eds.), *Proceedings of SITE 1999--Society for Information Technology & Teacher Education International Conference* (pp. 1906-1909). Association for the Advancement of Computing in Education (AACE). Retrieved November 18, 2021 from <https://www.learntechlib.org/primary/p/8152/>
- American Occupational Therapy Association (AOTA): Level I Fieldwork. (2021a). <https://www.aota.org/Education-Careers/Fieldwork/Levell.aspx>
- American Occupational Therapy Association. (2021b). *Information pertaining to occupational therapy in the era of coronavirus (COVID-19)*. <https://www.aota.org/coronavirus>
- American Occupational Therapy Association. (2021c). *Recommendations for expanding fieldwork*. <https://www.aota.org/EducationCareers/Fieldwork/Supervisor/Expanding.aspx>
- Andonian, L. (2013). Emotional intelligence, self-efficacy, and occupational therapy students' fieldwork performance. *Occupational Therapy in Health Care*, 27(3), 2012-215. <https://doi.org/10.3109/07380577.2012.763199>

- American Physical Therapy Association. (2020). *Impact of COVID-19 on the Physical Therapy Profession*. <https://www.apta.org/contentassets/15ad5dc898a14d02b8257ab1cdb67f46/impact-of-covid-19-on-physical-therapy-profession.pdf>
- Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, 12(1), 29-42.
- Beck, M., Kahanov, L., Dalomba, E., Ungaretta, L., Rooney, M., & Ryan, K. (2018). Pennsylvania occupational therapy fieldwork educator practices and preferences in clinical education. *Open Journal of Occupational Therapy*, 6(1), 12. <https://doi.org/10.15453/2168-6408.1362>
- Bennett, S., Rodger, S., Fitzgerald, C., & Gibson, L. (2017). Simulation in occupational therapy curricula: A literature review. *Australian Occupational Therapy Journal*, 64(4), 314-327. <https://doi.org/10.1111/1440-1630.12372>
- Brzykcy, D., Geraci, J., Ortega, R., Trenary, T., McWilliams, K., Bilics, A., & Harvison, N. (2016). Occupational therapy fieldwork education: Value and purpose. *American Journal of Occupational Therapy*, 70, 821. <https://doi.org/10.5014/ajot.2016.706S06>
- Carrier, A., & Beaudoin, M. (2020). Conceptualizing occupational therapists' change agent role to support entry-level pedagogical activities: Results from a scoping study. *Journal of Occupational Therapy Education*, 4(3), 3. <https://doi.org/10.26681/jote.2020.040303>
- Carroll, A., Herge, E., Johnson, L., Schaaf, R. (2017). Outcomes of an evidence-based, data driven-model fieldwork experience for occupational therapy students. *Journal of Occupational Therapy Education*, 1(1). <https://doi.org/10.26681/jote.2017.010102>
- Chien, C. W., Mo, S. Y. C., & Chow, J. (2020). Using an international role-modeling pedagogy to engage first-year occupational therapy students in learning professionalism. *American Journal of Occupational Therapy*, 74(6), 7406205060p1-7406205060p11. <https://doi.org/10.5014/ajot.2020.039859>
- Deluliis, E. D., & Saylor, E. (2021). Bridging the gap: Three strategies to optimize professional relationships with generation Y and Z. *Open Journal of Occupational Therapy*, 9(1), 1-13. <https://doi.org/10.15453/2168-6408.1748>
- Dewart, G., Corcoran, L., Thirsk, L., & Petrovic, K. (2020). Nursing education in a pandemic: Academic challenges in response to COVID-19. *Nurse Education Today*, 92, 104471. <https://doi.org/10.1016/j.nedt.2020.104471>
- Drynan, D. P., Nimmo, K., & Currie, L. M. (2018). Evaluation of the quality of occupational therapy fieldwork experiences. *International Journal of Practice Based Learning in Health and Social Care*, 6(2), 48-63. <https://doi.org/10.18552/ijpblhsc.v6i2.415>
- Hayden, C., Howell, D., & Causey-Upton. (2021). The editors' perspective: Online teaching and learning in a pandemic. *Journal of Occupational Therapy Education*, 5(1). <https://doi.org/10.26681/jote.2021.050101>

- Holland, K., Middleton, L., & Uys, L. (2012). The sources of professional confidence in occupational therapy students. *South African Journal of Occupational Therapy*, 42(3).
- Ingwersen, K., Lyons, N., & Hitch, D. (2016). Perceptions of fieldwork in occupational therapy. *Clinical Teacher*, 14(1), 55-59. <https://doi.org/10.1111/tct.12518>
- Jessee, M. A. (2018). Pursuing improvement in clinical reasoning: The integrated clinical education theory. *Journal of Nursing Education*, 57(1), 7-13. <https://doi.org/10.3928/01484834-20180102-03>
- Johnson, C. R., Koenig, K. P., Piersol, C. V., Santalucia, S. E., & Wachter-Schutz, W. (2006). Level I fieldwork today: A study of contexts and perceptions. *American Journal of Occupational Therapy*, 60(3), 275-287. <https://doi.org/10.5014/ajot.60.3.275>
- Keptner, K. M., & Klein, S. M. (2019). Collaborative learning in a faculty-led occupational therapy level I fieldwork: A case study. *Journal of Occupational Therapy Education*, 3(3), 8. <https://doi.org/10.26681/jote.2019.030308>
- Khan S., & Mian, A. (2020). Medical education: COVID-19 and surgery. (2020). *British Journal of Surgery*, 107(8). <https://doi.org/10.1002/bjs.11740>
- King, D., Tee, S., Falconer, E., Angell, C., Holley, D., & Mills, A. (2018). Virtual health education: Scaling practice to transform student learning: Using virtual reality learning environments in healthcare education to bridge the theory/practice gap and improve patient safety. *Nurse Education Today*, 71, 7-9. <https://doi.org/10.1016/j.nedt.2018.08.002>
- Kirke, P., Layton, N., & Sim, J. (2007). Informing fieldwork design: Key elements to quality in fieldwork education for undergraduate occupational therapy students. *Australian Occupational Therapy Journal*, 54, S13-S22. <https://doi.org/10.1111/j.1440-1630.2007.00696.x>
- Lloyd, K., & Gee, B. (2016). Use of occupation-based practice by therapists: A national practice pattern analyzed. *American Journal of Occupational Therapy*, 70. <https://doi.org/10.5014/ajot.2016.70S1-PO2051>
- Mattila, A., Martin, R. M., & Deluliis, E. D. (2020). Simulated fieldwork: A virtual approach to clinical education. *Education Sciences*, 10(10), 272. <https://doi.org/10.3390/educsci10100272>
- McBride, L. J., Fitzgerald, C., Morrison, L., & Hulcombe, J. (2015). Pre-entry student clinical placement demand: can it be met? *Australian Health Review*, 39(5), 577-581. <https://doi.org/10.1071/AH14156>
- McGaghie, W. C., Issenberg, S. B., Cohen, M. E. R., Barsuk, J. H., & Wayne, D. B. (2011). Does simulation-based medical education with deliberate practice yield better results than traditional clinical education? A meta-analytic comparative review of the evidence. *Academic Medicine: Journal of the Association of American Medical Colleges*, 86(6), 706. <https://doi.org/10.1097/ACM.0b013e318217e119>
- Moore, K. (2005). The sensory connection program manual: Activities for mental health treatment. Therapro, Inc.

- Nielsen, S., Jedlicka, J. S., Hanson, D., Fox, L., & Graves, C. (2017). Student perceptions of non-traditional Level I fieldwork. *Journal of Occupational Therapy Education*, 1 (2). <https://doi.org/10.26681/jote.2017.010206>
- Overton, A., Clark, M., & Thomas, Y. (2009). A review of non-traditional occupational therapy practice placement education: A focus on role-emerging and project placements. *British Journal of Occupational Therapy*, 72(7), 294-301. <https://doi.org/10.1177/030802260907200704>
- Ozelie, R., Janow, J., Kreutz, C., Mulry, M. K., & Penkala, A. (2015). Supervision of occupational therapy level II fieldwork students: Impact on and predictors of clinician productivity. *American Journal of Occupational Therapy*, 69(1), 6901260010p1-6901260010p7. <https://doi.org/10.5014/ajot.2015.013532>
- Robinson, M. R., Koverman, B., Becker, C., Ciancio, K. E., Fisher, G., & Saake, S. (2021). Lessons learned from the COVID-19 pandemic: Occupational therapy on the front line. *American Journal of Occupational Therapy*, 75(2), 7502090010-p7. <https://doi.org/10.5014/AJOT.2021.047654>
- Rodger, S., Stephens, E., Clark, M., Ash, S., Hurst, C., & Graves, N. (2012). Productivity and time use during occupational therapy and nutrition/dietetics clinical education: a cohort study. *PLoS One*, 7(8), e44356. <https://doi.org/10.1371/journal.pone.0044356>
- Romig, B. D., Tucker, A. W., Hewitt, A. M., & Maillet, J. O. S. (2017). The future of clinical education: Opportunities and challenges from allied health perspective. *Journal of Allied Health*, 46(1), 43-56.
- Simucase (2021). *Occupational therapy* [Video]. Retrieved November 16, 2021 from <https://www.simucase.com/occupational-therapy>
- Swinehart, S., & Meyers, S.K. (1993) Level I fieldwork: Creating a positive experience. *American Journal of Occupational Therapy*, 47(1), 68–73. <https://doi.org/10.5014/ajot.47.1.68>
- Tabatabai, S. (2020). Simulations and virtual learning supporting clinical education during the COVID 19 pandemic. *Advances in Medical Education and Practice*, 11, 513. <https://doi.org/10.2147/AMEP.S257750>
- Thomas, Y., Dickson, D., Broadbridge, J., Hopper, L., Hawkins, R., Edwards, A., & McBryde, C. (2007). Benefits and challenges of supervising occupational therapy fieldwork students: Supervisors' perspectives. *Australian Occupational Therapy Journal*, 54, S2-S12. <https://doi.org/10.1111/j.1440-1630.2007.00694.x>
- Velde, B.P., Lane, H. & Clay, M. (2009). Hands on learning: The use of simulated clients in intervention cases. *Journal of Allied Health*, 38(1), 17E-21E.
- Verkuyl, M., & Mastrilli, P. (2017). Virtual simulations in nursing education: A scoping review. *Journal of Nursing and Health Sciences*, 3(2), 39-47. <https://doi.org/10.1111/j.1440-1630.2007.00694.x>