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Keywords

Clinical competence, objective structured clinical examination (OSCE), assessment, qualitative research

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Occupational Therapy Students' Perceptions of OSCE: A Qualitative Descriptive Analysis

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ABSTRACT

Objective Structured Clinical Examinations (OSCE) are commonly used across health professions educational programs to evaluate student clinical competencies. OSCE are multiple, brief stations representing common practice scenarios. The purpose of the study was to evaluate student perceptions of OSCE. The researchers implemented 17 OSCE stations with 40 second year occupational therapy students to assess clinical competencies prior to fieldwork. Applying a qualitative descriptive methodologic approach, researchers analyzed station rating data, Qualtrics survey Likert-type items, and Qualtrics survey open-ended responses. Number of station rating responses varied widely, due to perceived time press. Station rating responses confirmed the more robust 80% response to Qualtrics survey. Analysis of Likert-type items revealed perceptions of OSCE as comprehensive, mixed eustress and distress, confirming of competence, and supportive of growth. Four dimensions of learning emerged from analysis of open-ended items: *temporal*, *real world*, *bottlenecks* to learning, and being *open to the process*. Findings affirmed student perceptions of OSCE to be valuable as summative and formative assessment of clinical competence. Existing literature supports three of the four dimensions of learning. The researchers advocate additional research to examine *bottlenecks* to learning, psychometrics of OSCE, the use of OSCE in program evaluation, and longitudinal study of student performance related to OSCE.

INTRODUCTION

Health professions educational programs traditionally evaluate student performance based on written examinations and clinical skill checkouts. Objective Structured Clinical Examinations (OSCE), originally proposed by Harden, Stevenson, Downie, and Wilson (1975), are an evaluation technique to objectively measure student clinical competence within related contexts. OSCE offer a means of practical evaluation in addition to traditional multiple-choice examination or skill checkouts. OSCE provide opportunities for faculty to assess clinical competence and for students to apply knowledge in a safe, structured environment. The purpose of this study was to evaluate student perceptions of OSCE prior to full-time fieldwork through qualitative descriptive inquiry.

LITERATURE REVIEW

OSCE entail a series of controlled, timed stations in which students demonstrate specific clinical skills. Topics assessed are unique to the curriculum in which students are enrolled (Khan, Gaunt, Ramachandran, & Pushkar, 2013). Students perform specific behaviors and skills related to specific circumstances while applying theory and process learned in coursework (Harden & Gleeson, 1979). OSCE may evaluate cognitive, affective, or psychomotor skills. OSCE may be question or procedural stations (Harden & Gleeson, 1979), and manned or unmanned. Question stations are unmanned, requiring the candidate to read, interpret, and respond to data without an examiner present. Procedural stations are typically manned (observed), with an examiner observing the skill performance in real time. Stations may be enhanced through the use of technology such as computers, multimedia, or manikins. In some circumstances, stations may be recorded for asynchronous rating. Two or more stations based on the same scenario are referred to as linked. Linked stations may consist of unmanned stations or an unmanned station progressing to a manned station.

Several health sciences researchers have suggested OSCE as an alternative or supplemental approach to evaluate student clinical skills in schools of medicine, dentistry, pharmacy, and nursing (Al Nazzawi, 2018; Awaisu, Abd Rahman, Nik Mohamed, Bux Rahman Bux, & Mohamed Nazar, 2010; Lafleur, Côté & Leppink, 2015; Martensson & Lofmark, 2013; Nasir et al., 2014; Pierre, Wierenga, Barton, Branday, & Christie, 2004; Wani & Dalvi, 2013). Researchers found student perceptions suggested OSCE as a practical way to test a variety of skills and offer real-world type assessment of their competencies (Al Nazzawi, 2018; Awaisu et al., 2010; Nasir et al., 2014; Pierre et al., 2004; Raheel & Naeem, 2013). Researchers also reported students perceived OSCE as fair, acceptable, mentally difficult, and challenging (Al Nazzawi, 2018; Awaisu et al., 2010; Khan, Ayub, & Shah, 2016; Raheel & Naeem, 2013). Nasir et al. (2014) valued student perception of OSCE as a vital indicator of successful implementation. Conclusions are mixed related to validity and reliability.

OSCE proved an opportunity for students to show management of unexpected and complicated circumstances. Kolb and Kolb (2009) described practical assessment through experiential learning theory based on a cycle of action, reflection, experience, and abstraction. Mezirow and Taylor (2009) proposed transformative learning theory, a means to facilitate student learning by confronting challenges. Disruption to rote thinking

prompts reflection on thoughts, beliefs, and practices. The authors hypothesized OSCE as challenge to student beliefs and behavior, serving as a catalyst for reflection and transformation in learning.

OSCE have grown in popularity and use across healthcare education; however, there is limited research for using OSCE specific to the profession of occupational therapy (OT). Edwards and Martin (1989) were the first to describe OSCE assessing OT students' clinical skills. They advised OSCE as valuable in formative and summative assessment. O'Brien and McNeil (2013) compared OSCE, Integrated Performance Procedure Instrument (IPPI), and fieldwork performance. The IPPI was a 2-hour written case-study examination in which students applied clinical reasoning. Authors found no significant correlations between the OSCE and IPPI, or clinical placement scores. They did conclude both OSCE and IPPI to be useful assessments of practice skills, recommending OSCE prior to fieldwork. Moliner (2016) found a moderate correlation between a comprehensive integrative OSCE, a reflective essay, grade point average, and fieldwork, suggesting relevance for learning. First year OT students perceived an interpersonal communication OSCE to be helpful or very helpful (Rowe, 2015). Pan and Liu (2017), and Krusen and Rollins (2019) described the development of OSCE with OT students as well as historical background. Fu et al. (2017) examined the use of children as standardized patients in pediatric OSCE. In addition to child and parent satisfaction, the authors found the majority of OT students preferred OSCE to written exam. Occupational therapy students also perceived OSCE to be helpful in preparation for clinical placement.

A small and growing set of studies suggest OSCE may be useful in OT education. Scholarship of teaching and learning (SoTL) inquiry enables informed decisions about evidence-based educational strategies (Cruz, Cunningham, Smentkowski, & Steiner, 2019). The researchers believed the experiential learning offered by OSCE to be valuable formative and summative student assessment. Researchers posed the question, 'What are OT students' perceptions of OSCE in preparation for full time clinical placement?' Additional inquiry and dissemination of information about OSCE will add to the body of knowledge of evidence-based methods of teaching and learning.

METHODOLOGY

Design

The researchers applied a qualitative descriptive methodology to examine student perceptions. Qualitative descriptive methodology is a pragmatic approach to exploratory study of people in context, following an interpretive model (Nayar & Stanley, 2014, p. 22). Qualitative descriptive studies draw from the general principles of naturalistic inquiry (Sandelowski, 2000), ranging across a continuum of interpretation (Sandelowski, 2010). Naturalistic inquiry uses techniques which allow the intended phenomenon to present itself as if it were not being studied. For instance, when researchers want to know the who, what, and where of events, this can be a beneficial research design. Qualitative descriptive inquiry is not connected to a specific theoretical framework, but it does not preclude the possibility of theory-driven investigation. As noted above, Kolb

and Kolb's experiential learning (2009), and Mezirow and Taylor's transformative learning theory (2009) underpinned the inquiry of OSCE evaluation.

Study Participants

Study participants represented a purposeful, naturally occurring, and convenience sample, a cohort of 40 second-year entry-level occupational therapy doctoral (OTD) students enrolled in a professional competencies course, just prior to Level II fieldwork. Students completed OSCE as a requirement of a professional competencies course at a university in the Pacific Northwest in the United States.

Procedures

A group of twelve OT faculty and practitioners designed over 30 scenarios in a modified Delphi process to identify perceived crucial skills. Faculty selected 17 scenarios for OSCE as a culminating activity within a competencies course. OSCE stations paralleled categories of the American Occupational Therapy Association (2002) assessment, the Fieldwork Performance Evaluation (FWPE). The FWPE is widely used in the United States to assess student performance during fieldwork. Categories included Evaluation, Intervention, Fundamentals, Management, Communication, Professional, and Basics. A variety of scenarios reflected a broad range of client age, diagnosis, and context. Each OSCE scenario follows a template including the objective, task, station status as manned or unmanned, and behavioral checklist.

Within the competencies course, students discussed the purpose and format of OSCE, scenario prompts, contingency plans, timing, station formatting, etc. In preparation for OSCE, students practiced improvisational skills for unexpected events (Krusen, 2012). Students also performed sample OSCE scenarios in various roles as patient, family member, practitioner, supervisor or rater. Finally, faculty assessed student competencies through OSCE prior to their participation in full time fieldwork.

OSCE took place at a single site, making use of office, study room, laboratory, and classroom spaces. OSCE consisted of 17 stations, five minutes each, with one-minute passing to the next station. OSCE consisted of seven manned stations and ten unmanned stations. Faculty and practitioner experts served as raters, staying at the same station throughout all rotations. Eight stations were linked for a total of four pairs. Three rest stations were interspersed at regular intervals. For each student at each station, raters completed a scenario-specific behavioral checklist and a separate overall rating or Global Rating Scale (Centre for Medical Education, Queen's University at Belfast, 2012). Each student began the rotation at a different station in the circuit. Each student received an individualized schedule; each started at a different point in the rotation. Faculty included accessibility modifications in accordance with documented recommendations from learning support services. Faculty returned individualized scores with feedback to each student within a week. Faculty held a full-class debrief the following class session, allowing time for questions and role play of scenarios perceived to be difficult.

Data Collection

Faculty designed three data sources specifically to gather information about student OSCE performance as part of routine course evaluation. The researchers applied each source retrospectively for qualitative analysis of student perception; paper-based station ratings, Likert-type survey items, and open-ended survey items. The first data source, station ratings (see Table 1) asked students for immediate feedback about each station while they were actively engaged in OSCE. Students completed station ratings with a mark while passing between OSCE stations. Station ratings required no additional writing. Faculty believed these in-the-moment ratings could also provide information about student stress when triangulated with retrospective survey. Station ratings addressed ease of understanding, level of difficulty, degree of learning needed or gained, and adequacy of time.

Table 1

Station Rating Example Taken for Each Station

Station Descriptions	Ratings		
Ease of understanding instructions	Easy	Neutral	Difficult
Level of difficulty	Easy	Neutral	Difficult
Degree of learning gained	Low	Neutral	High
Degree of learning needed to accomplish task	Low	Neutral	High
Adequacy of time	Not enough	Neutral	Enough

Faculty constructed a digital survey for course evaluation, data sources two and three in the study. Data were generated using Qualtrics © 2018 (Qualtrics, Provo, UT). Students (n=32) completed a Qualtrics survey when OSCE were finished, within one week. The Qualtrics survey included eleven items on a three-level Likert-type scale (see Table 2) related to organization, implementation, stress, impact on professional development, and so on. While Pierre, Wierenga, Barton, Branday, and Christie (2004) posed similar questions, faculty eliminated dichotomous positive or negative statements for OSCE, writing neutrally stated, item-specific survey items to control for acquiescence bias (Lui, Lee, & Conrad, 2015). The Qualtrics survey also included three open-ended items, asking students to describe the strengths of OSCE, recommendations for change, and additional comments.

Table 2

Qualtrics Survey Likert-type Items

Question Stem	Ratings		
OSCE were	fair	neutral	unfair
OSCE covered	wide range of competencies	neutral	limited range of competencies
OSCE were administered	well	neutral	poorly
OSCE were	dis-stressful	mix of good and bad stress	good stressful
OSCE were	well structured	neutral	poorly structured
OSCE scenarios were	intimidating	mixed	approachable
OSCE compared to other clinical exams	more stressful	same	less stressful
OSCE compared to other written exams	more stressful	same	less stressful
OSCE	heightened chance of failure	neutral	minimized chance of failure
OSCE helped identify areas for professional growth	agree	neutral	disagree
OSCE helped confirm areas of professional competence	agree	neutral	disagree

Data Analysis

The research team used Microsoft® Excel for Mac (Version 16.16.11) to manage and analyze station rating data and Qualtrics Likert-type item survey data. Four readers independently analyzed Qualtrics open-ended survey responses via Microsoft Word® for Mac (Version 16.16.11) and hand-written comments. In the first round of coding, all readers highlighted single words and phrases capturing first impression core concepts. In the second round of coding, all readers analyzed text for patterns of recurrent words, phrases, synonyms or agreement across data sources. In the third round of coding, researchers applied HyperRESEARCH 3.7.3 Computer Software of Researchware (Hesse-Biber, Kinder, & Dupuis, 2015) to map all reader codes as well as verbatim

quotations to illustrate student perceptions. Four dimensions of learning emerged from examination of the data. Researchers compared dimensions amongst themselves for a shared understanding.

Rigor and Ethics

The University Institutional Review Board (IRB) deemed the study exempt (IRB#1298488-1) as it involved archival aggregate data gathered as part of routine course evaluation. One researcher was a long-term practitioner and educator with a PhD. One researcher was a long-term master's-level practitioner currently enrolled in a PhD program. Two outside readers were early career OTD OTs with interest and experience in educational practice. Researchers retained an audit trail for each of the independent code reviews and comparative review. To improve trustworthiness, the researchers used multiple means of triangulation to uncover student perceptions (Nayar & Stanley, 2014, p. 31). These included station ratings, Qualtrics survey Likert-type items, and Qualtrics survey open-ended items. Having slightly different researcher perspectives supported robust analysis, as well as improved trustworthiness through triangulation. Dimensions of learning may be traced to direct quotations of student respondents.

RESULTS

Station Ratings

When each student was asked to rate each station during OSCE rotations, several students commented that they felt pressed for time, so they stopped filling out the rating forms. Some students completed no station ratings during rotations. The number of responses for each station varied from 45% (18/40) to 73% (29/40) of students. The following station ratings must be considered in light of the widely varying number of respondents.

Adequacy of time. Across 3 of the 17 stations, students rated *not enough time*.

- Station A (question, unmanned) directed students to identify levels of evidence for three article abstracts. 70% of respondents (19/29) indicated they did not have enough time to complete Station A. Respondents described concerns about reading so much material.
- Station I (procedural, manned) was the second half of a linked station, directing students to teach a parent/guardian how to use a computer or mobile application. 50% of respondents (11/21) indicated they did not have enough time to complete Station I. The most reported issue was that the location in the building prevented successful download.
- Station J (procedural, manned) directed students to work with an adult with intellectual disabilities to complete a new vocational task. 64% of respondents (14/22) rated Station J as having not enough time. An unspoken agenda was to manage the client's distress when changing from a familiar task to the new task presented. Some students reported that they focused on teaching the new task rather than the client's distress.

Ease of understanding instructions. As a whole, students rated stations as easy (or neutral) for ease of understanding instructions across 16 stations. The researchers were gratified to read that students perceived instructions for the stations as understandable. Faculty effort was well-spent writing clear scenarios and instructions according to the template. At only a single station, Station G, did 40% of responding students (7/18) indicate difficulty understanding instructions. Station G (procedural, unmanned, technology assisted) was the second of a pair of linked stations, requiring students to leave treatment instructions for an occupational therapy assistant. Seven students expressed difficulty correctly pausing and resuming recording equipment.

Level of difficulty. Stations A, K, and Q were stations at which students reported the level of the task as *difficult*. 80% of respondents (24/28) indicated Station A to be difficult. Station A directed students to identify levels of evidence for three article abstracts. 70% of students (18/24) noted Station K to be difficult. Station K (procedural, manned) directed students to discuss discharge planning with a client having expressive aphasia. 70% of responding students (14/16) identified Station Q as difficult, at which they were directed to identify treatment (Resource Utilization Group) level for a patient in skilled nursing (question, unmanned).

Learning gained and needed. 80% of respondents (23/30) indicated Station A (reading abstracts) as needing a high degree of learning to accomplish the task. 70% of respondents (18/25) indicated Station K (patient with aphasia) as needing a high degree of learning to accomplish the task, with 60% (16/26) indicating a high degree of learning gained while accomplishing the task. 60% of respondents (14/22) indicated Station M as needing a high degree of learning to accomplish the task. Station M directed students to propose occupation-based activities to improve dynamic balance.

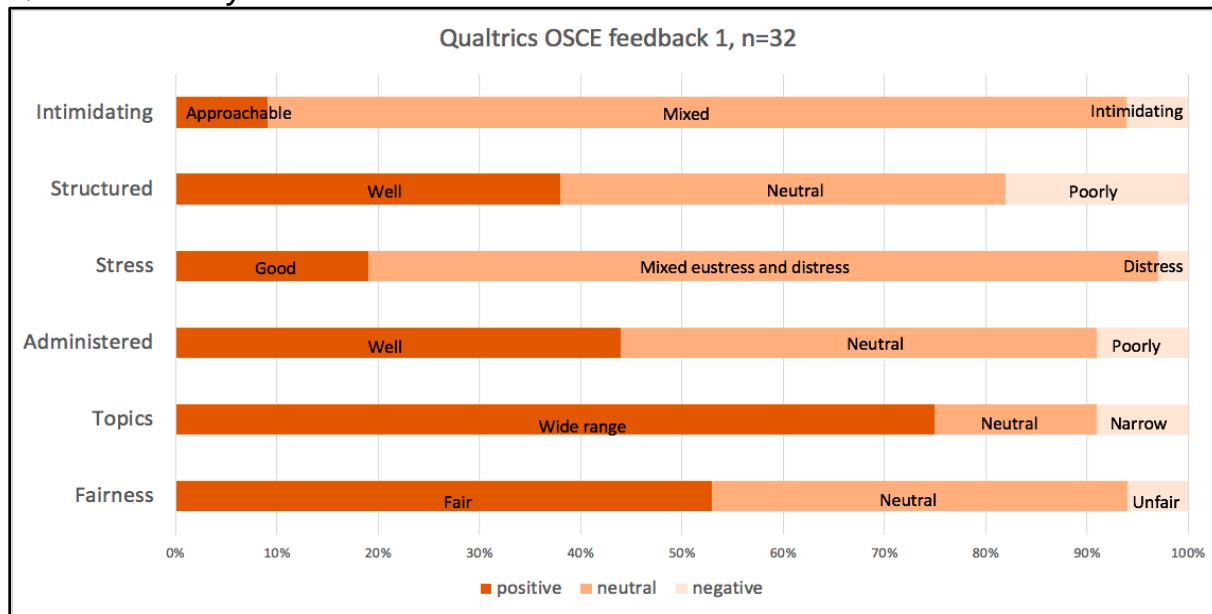
Students described specific stations as most valuable for learning that required intensive interaction with patients having complex needs, K (patient with aphasia), and O (patient who has fallen in love). Specific stations reported as difficult required complex reading (A) and involved a complex patient (J). Station A required students to identify the level of evidence for each of three article abstracts, a total of ~1 ½ pages of text. Students appeared to miss printed cues to the level of evidence within each abstract. Station J required student intuition to stop rating the client's performance in order to attend to the client's distress. Some students quickly grasped the need for a client-centered focus, while many became stuck, continuing to rate the performance.

Qualtrics Survey Likert-type Items

Thirty-two students completed the Qualtrics survey, representing 80% (32/40) of those who participated in OSCE. Tables 3 and 4 indicate participant feedback on Likert-type items. Respondents related the experience to be a combination of intimidating and approachable (84.38%, 27/32). A majority of respondents related the experience to be a combination of good and bad stress (78.13%, 25/32). Data indicated more tempered responses to OSCE as being well-administered (43.75%, 14/32) and well-structured (37.5%, 12/32). Respondents reported OSCE to cover a wide range of topics (75%, 24/32), and fair (53%, 17/32).

Table 3

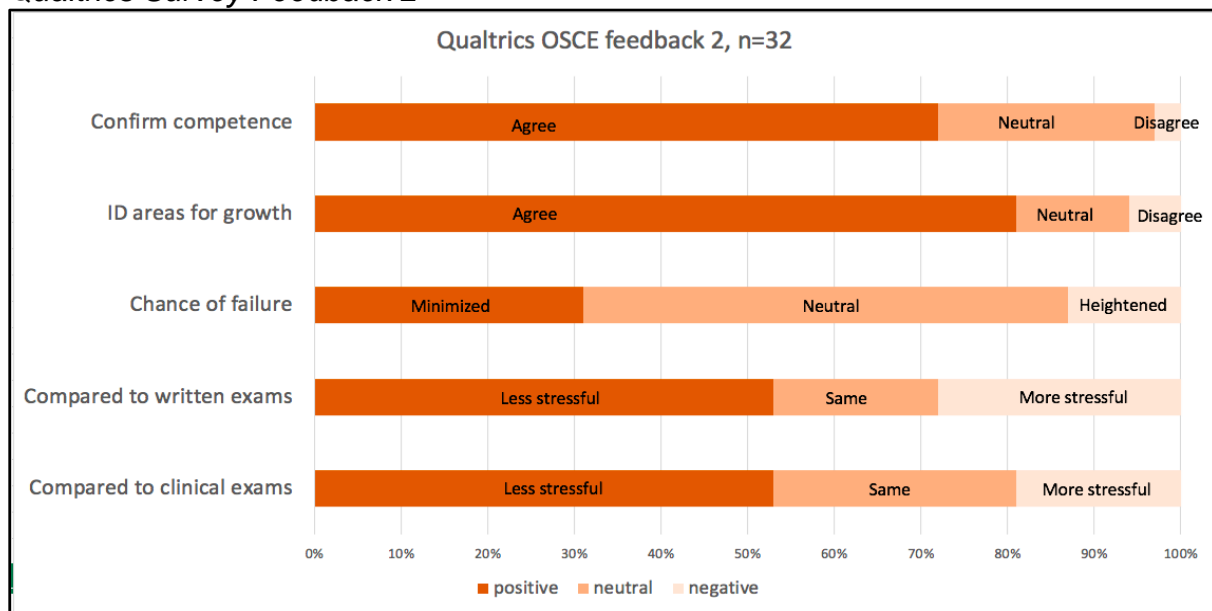
Qualtrics Survey Feedback 1



More than 70% (23/32) of respondents reported OSCE as confirming of competence, while more than 80% (26/32) enabled them to identify areas for growth. About half of respondents (56%, 18/32) perceived OSCE to be neutral in terms of opportunity for failure. A modest number reported OSCE to be notably less stressful than written or clinical exams (53% respectively, 17/32).

Table 4

Qualtrics Survey Feedback 2



Qualtrics Survey Open-ended Items

As noted above, 80% (32/40) of OSCE participants completed the Qualtrics survey, responding to three open-ended questions: strengths of OSCE, recommendations for change, and additional comments. Following thematic analysis of student perceptions, responses revealed four dimensions of learning: *temporal*, *real world*, *bottlenecks*, and *being open to the process*. See Table 5 for quotations representing each dimension.

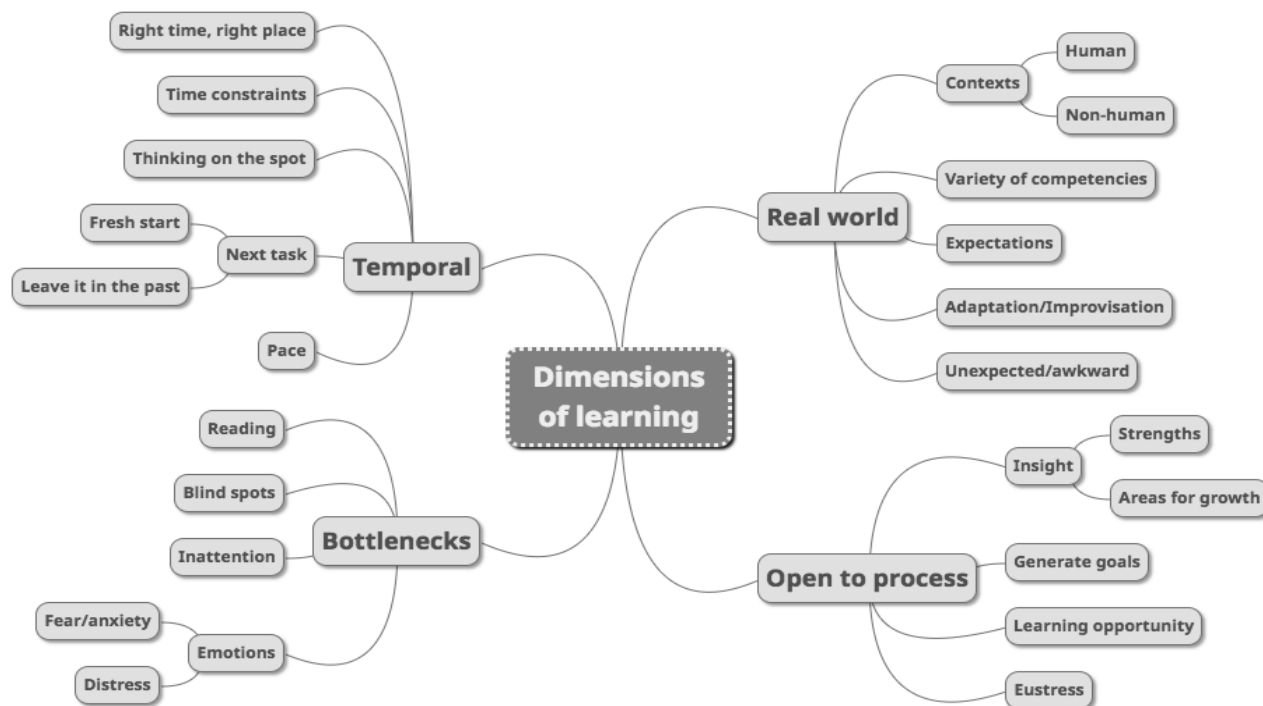


Figure 1. Dimensions of learning.

Multiple respondents mentioned time in different ways, facets of a *temporal* dimension of learning. This confirmed concerns related to time described in station ratings. Many respondents recommended extra time at each station, as well as slightly longer periods to rotate between stations. Temporal comments were not limited to clocking minutes; comments also addressed pacing, thinking quickly, and a press for time in OSCE performance mirroring a press for time in a typical day in practice. Students also noted that the compressed design of OSCE required that they move to the next station literally and figuratively. There was no time to dwell on performance success or failure at the previous station. Comments reflected supports and challenges of time in the process of learning during OSCE.

Student comments connected *temporal* dimensions of learning during OSCE with the *real world* of fieldwork and practice. Students described similarities between OSCE and practice through comments regarding variety across stations, demand to think quickly, need for improvisation, and professional skills during challenging circumstances. Open ended comments confirmed station ratings describing complex scenarios as most valuable for learning.

Students were aware of OSCE as a course requirement to demonstrate clinical competencies. While some appreciated OSCE as “*a great chance to practice resilience without the consequences I'd normally face in a job/during fieldwork*”, other students appeared unclear the experience was intended to be supportive of growth. A few respondents described stress, anxiety, and fear led to performance issues of inattention, poor reading, difficulty prioritizing, and difficulty strategizing. Some participants neglected to implement therapeutic process, content, and professional skills taught within the core curriculum. Poor awareness and insight revealed places where students get stuck, or *bottlenecks* to learning.

However, most students managed their stress in constructive ways. They quickly recognized their responsibility in OSCE and overcame *bottlenecks* to become *open to the process* of learning. Students stated the value of learning from what went wrong, as well as what went right. Another feature of being *open to the process* included expressing gratitude for learning in a safe space. Most learners made a leap of faith in their instructors and in themselves. They trusted faculty to design a new learning experience with an opportunity for them to demonstrate skills as well as receive constructive feedback for next steps in professional development.

Table 5

Quotations Representing Dimensions of Learning

Temporal
<ul style="list-style-type: none"> • It was a good experience to think on our feet. It was well organized but a bit more time between stations would have been helpful. • More time at each station would have been nice, more time between would have been nice. But I also think adjusting in such a way would have taken away from the part I appreciated most (the opportunity to practice performing in a high stress situation). • The pace allowed me to forget about mistakes I had made and move onto the next competency. There wasn't any waiting to obsess about what I had done wrong. • I really enjoyed “thinking on the spot” approach, it was very similar to what I envision my critical thinking to need to be in practice. • The pace pushed me to act on instincts rather than a rehearsed plan, which I am sure is more what my fieldwork is going to be like.
Real world
<ul style="list-style-type: none"> • The strengths of the OSCEs were that we had the chance to think on our feet and practice critical thinking and problem solving skills. This prepares us for fieldwork when we have to be able to adapt on the spot. I also thought the scenarios with raters were great practice for interactions we may have. • It was definitely was high stress, but I don't think high stress is a negative thing. I believe fieldwork will be the same "high stress" feel, with similar time constraints. It was great to be under pressure and have performance expectations that mocked the real world. • The greatest strength of these were the awkward/challenging situations.

<ul style="list-style-type: none"> • I appreciated the wide range of competencies. I feel that it truly tested my knowledge and the unexpected questions will help me prepare for the real world.
Bottlenecks
<ul style="list-style-type: none"> • I felt set up to fail in front of professors I respect. • I am struggling to answer how walking blind into a scenario and making things up on the spot with limited information actually tests my competency. • Let us know there will be acting scenerios [sic], I wasn't anticipating that and was surprised. • 18 stations were too overwhelming. By the end of OSCE's, I was extremely exhausted and could not perform my best on the last stations. • The stations with the abstracts to read were the most stressful. I don't remember ever seeing the rating scale to use with the articles before yesterday and I definitely struggled to read them. I understand the purpose behind them and I appreciate the use of evidence-based practice, it was just difficult for me personally to get through the reading. • I rushed through most of the instructions/prompts which caused me to overlook critical information.
Open to the process
<ul style="list-style-type: none"> • Although I had a panic attack, I appreciate that this happened now and not in a clinic. I now know I need to recognize what a panic attack is, what it feels like in my body, and how to cope with it. Although seemingly bad, it was an excellent learning experience for me. This synthesized how it may be in the clinic where I may become overwhelmed and need to cool down quickly and move on to the next client. • I had a really positive experience. My weakness is in resilience and moving on when things don't go perfectly, and this was a great opportunity to challenge those skills. • The atmosphere you created! It was understood that this was a serious test but the intent was for my learning. Mistakes were okay and a good opportunity to reflect and learn. Thank you! The feedback! Without the feedback it would have been more difficult for me to reflect on the experience. • The rooms with a live person were very telling of how much you knew or needed to learn more about (or just plain forgot :0). • I felt like it was a great, low risk way to test our skills. • I was able to see me and my skills in the big picture. I genuinely learned a lot about myself today! • I enjoyed the OSCEs and learned a lot! I feel more prepared in my ability to jump in to situations in which I don't feel comfortable. • This was a great experience and I like the idea of putting what we've learned into cohesive scenarios that test all aspects of patient care.

DISCUSSION

Two of the four dimensions of learning: *temporal*, and *real world*, reflect findings elsewhere in the literature. The research teams evaluated student perceptions of learning, identifying stress, time, and a positive learning environment as important factors (Al Nazzawi, 2018; Hemingway, Stephenson, Roberts, & McCann, 2014; Pierre et al., 2004; Rasheel & Naeem, 2013). Stakeholder recommendations for flexible time limits and an increased opportunity to prepare for specific competencies are also reflected in the literature (Al Nazzawi, 2018; Awaisu et al., 2010; Jay, 2007; Khan et al., 2016; Raheel & Naeem, 2013).

A few students reported stress, anxiety, and fear significant enough to influence their performance during OSCE. When stressors led to an inability to demonstrate essential practice skills, they created *bottlenecks* to learning. Bottlenecks are places where learners get stuck, where learners are unable to find solutions or to see their part in the process (Middendorf & Shopkow, 2018). Bottlenecks to learning offer growth opportunities for students, however, some students could not focus on the task, identify strategies for implementation or set priorities for performance during some OSCE scenarios. While threshold concepts are increasingly discussed in the literature, the concept of decoding the discipline to identify and overcome bottlenecks to learning is not yet addressed.

Most students were *open to the process*, perceiving their demonstration of clinical competence to be intertwined with next steps for improvement. Faculty designed OSCE to be summative, indicating student mastery of clinical skill prior to fieldwork. It became apparent that while students perceived OSCE as an assessment of learning acquired during their time in the program thus far, they also used the experience *for learning*. Faculty observation of assessment as formative and summative echoed that of Pugh, Desjardins, and Eva (2018), who also noted students viewed OSCE as an assessment of learning and *for learning*. Pugh, Desjardins, and Eva also posited that learners tend not to discriminate between formative and summative assessment in the same way as educators.

Limitations of the study include a small cohort of 40 students within a single health profession, within a single university. The varied number of station rating responses (45-73%) was also a limitation, though moderated by the 80% Qualtrics survey response. The inconsistent responses on the station ratings were likely influenced by the timing of the inquiry, during rotations. Future OSCE could streamline station ratings or increase the passing period between stations, enabling more time to complete rating.

IMPLICATIONS FOR OCCUPATIONAL THERAPY EDUCATION

Findings may be useful for teaching and learning, theory development, and practice. OSCE may be used as evidence-based education for students to rehearse clinical competence across many scenarios, practicing critical reasoning in preparation for fieldwork. OSCE may help characterize signature pedagogical approaches in occupational therapy education. Engaging practitioners in OSCE development narrow

the distance between clinical and academic contexts, between expert and novice thinking.

Researchers recommend several avenues of inquiry to address gaps in the literature. Additional inquiry could examine psychometrics of OSCE, the utility of OSCE for curricular and program evaluation, as well as longitudinal correlation across other didactic and fieldwork educational outcomes. For theory development, researchers suggest comparing the complementary models of Threshold Concepts and Decoding the Disciplines. Finally, researchers advocate collaboration across stakeholders, practitioners, faculty, and students, to identify bottlenecks to learning, illuminate expert thinking, design new OSCE as scholarly teaching, and measure outcomes. By applying OSCE in OT educational programs, we can begin to fill a knowledge to action gap and prepare OT students for their clinical fieldwork placements and practice.

CONCLUSION

Scholars have investigated OSCE within various health professions educational programs, yet little research has been done on their application within OT. Researchers conducted this study to investigate OT students' perception of OSCE prior to clinical fieldwork placement. Findings revealed four dimensions of learning including *temporal*, *real world*, *bottlenecks* to learning, and being *open to the process*. The results of the study revealed most students perceived OSCE as a worthwhile demonstration of developing competence, bridging novice-to-expert ways of knowing and practicing in a safe and structured environment. Researchers suggest additional SoTL inquiry of theoretical and practical application to add to the body of knowledge of evidence-based education.

References

- Al Nazzawi, A. A. (2018). Dental students' perception of the Objective Structured Clinical Examination (OSCE): The Taibah University experience, Almadinah Almunawwarah, KSA. *Journal of Taibah University Medical Sciences*, 13(1), 64-69. <https://doi.org/10.1016/j.jtumed.2017.09.002>
- American Occupational Therapy Association. (2002). Fieldwork performance evaluation for the occupational therapy student. Retrieved from http://cnhs.fiu.edu/ot/assets/documents/AOTA_FW_Perf_Eval_Student.pdf
- Awaisu, A., Abd Rahman, N., Nik Mohamed, M., Bux Rahman Bux, S., & Mohamed Nazar, N. (2010). Malaysian pharmacy students' assessment of an objective structured clinical examination (OSCE). *American Journal of Pharmaceutical Education*, 74(2), 34. <https://doi.org/10.5688/aj740234>
- Centre for Medical Education. Queen's University Belfast. (2012). OSCE examiner training and development. https://www.med.qub.ac.uk/osce/background_Scores.html
- Cruz, L., Cunningham, K., Smentkowski, B., & Steiner, H. (2019). The SoTL scaffold: Supporting evidence-based teaching practice in educational development. *To Improve the Academy*, 38(1), 50-66. <https://doi.org/10.1002/tia2.20090>

- Fu, C., Yeh, J., Su, C., Liu, C., Chang, W., Chen, Y., . . . Wang, C. (2017). Using children as standardized patients in OSCE in pediatric occupational therapy. *Medical Teacher, 39*(8), 851-858. <https://doi.org/10.1080/0142159X.2017.1320540>
- Edwards, M., & Martin, A. (1989). Objective structured clinical examination as a method of occupational therapy student evaluation. *Canadian Journal of Occupational Therapy, 6*(3), 128-131. <https://doi.org/10.1177/000841748905600306>
- Harden, R., & Gleeson, F. (1979). Assessment of clinical competence using an objective structured clinical examination (OSCE). *Medical Education, 13*(1), 39-54. <https://doi.org/10.1111/j.1365-2923.1979.tb00918.x>
- Harden, R., Stevenson, M., Downie, W., & Wilson, G. (1975). Assessment of clinical competence using objective structured examination. *British Medical Journal, 1*(5955), 447-451. <https://doi.org/10.1136/bmj.1.5955.447>
- Hemingway, S., Stephenson, J., Roberts, B., & McCann, T. (2014). Mental health and learning disability nursing students' perceptions of the usefulness of the objective structured clinical examination to assess their competence in medicine administration. *International Journal of Mental Health Nursing, 23*(4), 364-373. <https://doi.org/10.1111/inm.12051>
- Hesse-Biber, S., Kinder, T.S. & Dupuis, P.R. (2015). HyperRESEARCH 3.7.3. Computer Software of Researchware [Software]. Available from <http://www.researchware.com/>
- Jay, A. (2007). Students' perceptions of the OSCE: A valid assessment tool? *British Journal of Midwifery, 15*(1), 32-37. <https://doi.org/10.12968/bjom.2007.15.1.22677>
- Khan, K., Gaunt, K., Ramachandran, S., & Pushkar, P. (2013). The objective structured clinical examination (OSCE): AMEE Guide No. 81. Part II: Organisation & administration. *Medical Teacher, 35*(9), E1447-63. <https://doi.org/10.3109/0142159X.2013.818635>
- Khan, A., Ayub, M., & Shah, Z. (2016). An audit of the medical students' perceptions regarding objective structured clinical examination. *Education Research International, 2016, 4*. <https://doi.org/10.1155/2016/4806398>
- Kolb, A.Y., & Kolb, D.A. (2009). Experiential learning theory: A dynamic, holistic approach to management learning, education and development. In S.J. Armstrong & C.V. Fukami (Eds.), *SAGE handbook of management learning, education and development* (pp. 42-68). Thousand Oaks (CA): Sage Publications.
- Krusen, N. (2012). Improvisation as an adaptive strategy for leadership and practice. *Occupational Therapy in Health Care, 26*, 64-73. <https://doi.org/10.3109/07380577.2011.637609>
- Krusen, N. & Rollins, D. (2019). Design of an OSCE to assess clinical competence of occupational therapy students. *Journal of Occupational Therapy Education, 3*(1). <https://doi.org/10.26681/jote.2019.030111>
- Lafleur, A., Côté, L., & Leppink, J. (2015). Influences of OSCE design on students' diagnostic reasoning. *Medical Education, 49*(2), 203-214. <https://doi.org/10.1111/medu.12635>

- Liu, M., Sunghee Lee, S., & Conrad, F.G. (2015). Comparing extreme response styles between agree-disagree and item-specific scales. *Public Opinion Quarterly*, 79(4), 952-975. <https://doi.org/10.1093/pog/nfv034>
- Mårtensson, G., & Löfmark, A. (2013). Implementation and student evaluation of clinical final examination in nursing education. *Nurse Education Today*, 33(12), 1563-1568. <https://doi.org/10.1016/j.nedt.2013.01.003>
- Mezirow, J., & Taylor, E. W. (Eds). (2009). *Transformative learning in practice: Insights from community, workplace, and higher education*. San Francisco, CA: Jossey-Bass.
- Middendorf, J., & Shopkow, L. (2018). *Overcoming student learning bottlenecks*. Sterling, VA: Stylus.
- Moliner, C. (2016, June). *Objective Structured Clinical Examination adapted to assess whole OT process and framework: Experiment it to understand*. Paper presented at First Joint Congress of the Council of Occupational Therapists in European Countries/European Network of Occupational Therapists in Higher Education, Ireland.
- Nasir, A. A., Yusuf, A. S., Abdur-Rahman, L. O., Babalola, O. M., Adeyeye, A. A., Popoola, A. A., & Adeniran, J. O. (2014). Medical students' perception of objective structured clinical examination: A feedback for process improvement. *Journal of Surgical Education*, 71(5), 701-706. <https://doi.org/10.1016/j.jsurg.2014.02.010>
- Nayar, S., & Stanley, M. (2014). *Qualitative research methodologies for occupational science and therapy*. Abingdon, Oxon: Routledge. <https://doi.org/10.4324/9780203383216>
- O'Brien, J., & McNeil, S. (2013). Teaching effectiveness: Preparing occupational therapy students for clinical practice. *Open Journal of Occupational Therapy*, 1(3), 2-11. <https://doi.org/10.15453/2168-6408.1045>
- Pan, A.W., & Liu, L.T. (2017). Construction and development of the objective structured clinical examination (OSCE) in occupational therapy. *Journal of Medical Education*, 21, 9–25. <https://doi.org/10.6145/jme201702>
- Pierre, R., Wierenga, A., Barton, M., Branday, J., & Christie, C. (2004). Student evaluation of an OSCE in paediatrics at the University of the West Indies, Jamaica. *BMC Medical Education*, 4, 22-28. <https://doi.org/10.1186/1472-6920-4-22>
- Pugh, D., Desjardins, I., & Eva, K. (2018). How do formative objective structured clinical examinations drive learning? Analysis of residents' perceptions. *Medical Teacher*, 40(1), 45-52. <https://doi.org/10.1080/0142159X.2017.1388502>
- Qualtrics. (2018). Qualtrics Research Suite [Software]. Available from <http://www.qualtrics.com>
- Raheel, H., & Naeem, N. (2013). Assessing the Objective Structured Clinical Examination: Saudi family medicine undergraduate medical students' perceptions of the tool. *Journal of the Pakistan Medical Association*, 63(10), 1281-1284. Retrieved from <https://jpma.org.pk>

- Rowe, P. (2015). A formulation and critical evaluation of an inter-personal communication skills objective structured clinical examination (OSCE) in preregistration occupational therapy education. (Unpublished doctoral dissertation). University of Derby, England.
Retrieved from <https://derby.openrepository.com/handle/10545/556935>
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334-340.
[https://doi.org/10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G)
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited? *Research in Nursing & Health*, 33(1), 77-84. <https://doi.org/10.1002/nur.20362>