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Facilitating peer based learning through summative assessment – An adaptation of the Objective Structured Clinical Assessment tool for the blended learning environment

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ABSTRACT

Adapting a course from face to face to blended delivery necessitates that assessments are modified accordingly. In Australia the Objective Structured Clinical Assessment tool, as a derivative from the Objective Structured Clinical Examination, has been used in the face-to-face delivery mode as a formative or summative assessment tool in medicine and nursing since 1990. The Objective Structured Clinical Assessment has been used at Charles Darwin University to assess nursing students' simulated clinical skills prior to the commencement of their clinical placements since 2008. Although the majority of the course is delivered online, students attend a one-week intensive clinical simulation block yearly, prior to attending clinical placements. Initially, the Objective Structured Clinical Assessment was introduced as a lecturer assessed summative assessment, over time it was adapted to better suit the blended learning environment. The modification of the tool from an academic to peer assessed assessment tool, was based on the empirical literature, student feedback and a cross-sectional, qualitative study exploring academics' perceptions of the Objective Structured Clinical Assessment (Bouchoucha et al., 2013a, b). This paper presents an overview of the process leading to the successful adaptation of the Objective Structured Clinical Assessment to suit the requirements of a preregistration nursing course delivered through blended learning. This is significant as many universities are moving their curriculum to fully online or blended delivery, yet little attention has been paid to adapting the assessment of simulated clinical skills. The aim is to identify the benefits and drawbacks of using the peer assessed Objective Structured Clinical Assessment and share recommendations for successful implementation.

1. Introduction

The Objective Structured Clinical Assessment (OSCA) is used in simulated clinical teaching settings to assess students' clinical skills. The OSCA was derived from the Objective Structured Clinical Examination (OSCE) tool and introduced in Australia in 1990 (Bujack et al., 1991a,b; Major, 2005). The traditional OSCE was based on a simulated patient and consisted of a multi station setup (Kurz et al., 2009). Students rotated through each station, within a pre-determined timeframe, carrying out various procedures or answering set questions (Harden and Gleeson, 1979). Bujack et al. (1991a,b) adapted the OSCE to reflect the nature of nursing rather than medical practice in 1991. The adaptation became known as the Macarthur OSCA. Since then the OSCA has been further adapted and deemed effective in assessing nursing students competencies (East et al., 2014). This paper traces the introduction and adaptation of the OSCA tool to better suit a preregistration nursing course delivered through blended learning.

2. Background

In 1997 Charles Darwin University (CDU) externalised the delivery of its undergraduate nursing degree and by 2008 most of the course was delivered online. Many CDU students complete the theory component of their course as external students. The only face to face component of their course is three Simulation Blocks (SB). During the SB, clinical skills, unable to be taught online are demonstrated by staff, and then practiced by students. At the end of

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the SB students are expected to pass a certain number of OSCAs. The OSCAs are summative and must be passed before students can proceed to their clinical practicum.

In courses delivered by internal mode, students are on site and have access to clinical laboratories throughout the semester. Internal students, therefore, have the benefit of being able to practice their simulated clinical skills over an extended period of time. The skills internal students have learned and practiced, are then assessed at the end of the semester. In contrast, CDU nursing students are not able to practice learned skills over the course of a semester. Clinical skills are taught and assessed within a condensed timeframe during the SBs.

The SBs cover most of the skills nursing students will potentially be exposed to during their clinical placements (e.g., complex dressing; intramuscular injection). These skills are determined by the scope of practice document for the corresponding year level. Time is dedicated to the demonstration and practice of most skills, in addition to the assessment of selected clinical skills as determined by the nursing faculty. It is important to stress that in the face-to-face delivery mode assessment usually occurs after the students have had several weeks to practice skills. The transition to an online reliant course incorporating the SB model meant that practice time was condensed to 24–48 h and it constituted a major change to the intention of traditional clinical skills assessment tools.

In late 2008, two OSCA assessments per SB were introduced. In first and second year both these assessments were carried out by academic staff. In third year, however, one assessment was predetermined and known to the students and assessed by academic staff, whilst the second was randomly chosen out of a pool of four skills and peer-assessed. These skills included blood transfusion administration, setting up and connecting patient controlled analgesia, central venous catheter dressing and tracheostomy dressing change. Positive feedback from the third-year peer OSCAs from both staff and students resulted in the peer OSCA being introduced into the second-year SBs in 2011, and in 2013 they were successfully extended to the first-year SBs.

The skill assessed in the peer OSCA is not known to the students and chosen out of four predetermined skills. The student does not know until they walk into the assessment room which skill they will be assessed on. Not knowing which skills is being assessed acts as an incentive to practice all four skills and allows for better utilisation of the time spent in practice session which in turn has an impact on skill retention. Bond et al. (2007) showed that the best predictor of competent performance is repetitive, deliberate practice. It can however lead to students practicing non–assessed skills less.

Preparing students for the peer assessment is essential (Garner et al., 2010; Rush et al., 2012; Topping, 2009). Successful preparation will decrease the chances of issues arising during the process. Preparation should include information regarding professional obligations and assertiveness training. Staff also need to model how to provide useful constructive feedback. Students would then practice the OSCA procedure before the actual assessment. Practicing the OSCA procedure allows students to feel more comfortable with the process. Providing an assessment guide could also increase students confidence and decrease the risk of poor interrater reliability, although completely removing the risks of discrepancies between assessors might prove extremely challenging and near impossible (East et al., 2014).

Despite the OSCA having been shown to be one of the most adequate clinical skills assessment formats, there are some drawbacks to its use. One of these drawbacks is the potential for discrepancies in administration of the tool. Standardised and consistent administration of the OSCA is essential to decrease the risk of interrater discrepancies (Bouchoucha et al., 2013b; Najjar et al., 2016). Being a labour intensive assessment modality has also been cited as a drawback to its use (Baid, 2011; Chenot et al., 2007). Utilising students as assessors would overcome some of the associated drawbacks, as well as ensuring students are equipped with lifelong skills. These skills, often referred to by Universities as graduate attributes, such as team work, problem solving skills or communication, are essential attributes for successful employment (Kember et al., 2016). Although Chenot et al. (2007) found that students can have mixed feelings about assessing each other, most students accept the ratings given by their peers, and feel confident that they are able to accurately rate their peers.

Li et al. (2010) listed the benefits of peer assessment for the assessor and assessee as constructive reflection, increased time on task, attention to crucial elements of quality work and greater sense of accountability and responsibility. In addition to these benefits, Topping (2009) argued that peer assessment results in improvements in the effectiveness and quality of learning for both the assessor and the assessee. Casey et al. (2011) found that students generally enjoyed the process and that peer assessment facilitated and enhanced student learning. Furthermore, van Dulmen et al. (2014) demonstrated that peer assessment is an effective method to improve guideline knowledge and guideline, consistent clinical reasoning.

Despite the benefits widely described in the literature (Li et al., 2010; Topping, 2009; Casey et al., 2011; van Dulmen et al., 2014), there was an initial reluctance amongst lecturing staff at CDU to implement peer assessment for first year students. It took several years for peer OSCAs to be accepted as a first-year assessment mode. Falchikov and Goldfinch (2000) found that there was no course level difference in peer-teacher marking correspondence, challenging the perception that peer assessment should be reserved to more senior students, Rush et al. (2012) also documented the successful implementation of peer assessed clinical skills in the first year of study, and identified improvements in the learning of skills, teamwork, communication and the ability to give and receive constructive feedback. Furthermore, Hodgson et al. (2014) suggested that if more educators adopted peer assessment to improve student learning in first year, it would be likely that teacher guidance could be incrementally withdrawn in subsequent years.

Lecturer assessed OSCAs have been found to be stressful for students (Bouchoucha et al., 2013a; Furlong et al., 2005). Excessive stress has the potential to negatively affect performance (Arora et al., 2010). This is mostly investigated in the literature in surgical practitioners and trainees (Arora et al., 2010) with the impact of stress on the performance of psychomotor skills in simulated nursing settings seldom studied. The peer assessed OSCA is not as stressful as the traditional OSCA for the students, which in turn has the potential to improve performance. This position is supported by McKenna and French (2011) who found that students are less anxious performing a skill in front of their peers than lecturers, and can better interact and communicate with peer assessors. Additionally, peer assessment motivates students to practice and improves their ability to critically appraise the performance of peers (Topping, 2009). Another benefit described by Li et al. (2010) is the ability for students to gain greater insight into the assessment process as they need to familiarise themselves with the standards/assessors tool prior to assessing their peers.

While many benefits of peer assessment are described in the literature, there are also some perceived drawbacks. Some of the arguments used for not using peer assessment include that the students do not have the expertise to assess each other, do not know what constitute good work, can collude with each other, lack experience or give invalid marks and create an increased workload

for academic staff (Liow, 2008).

Some studies also found that there is more improvement in skills when students are given feedback by the teacher, rather than peers (Falchikov, 1995; Ozogul et al., 2006). This aspect must be considered against the benefits of peer assessed OSCAs. It is also important to remember that while the improvement may not be as great as with teacher's feedback, there is still improvement and additional benefits for the assessor.

The potential for over estimation of marks is also an argument put forward against the use of peer assessments. Liow (2008) showed that the marks awarded by peers were around 5–10% higher than marks awarded by tutors. Bouchoucha and Wozniak (2010), however, found that students awarded marks lower than the lecturer in the context of asynchronous online discussions. Topping (2009) found that the reliability of and validity of peer assessments was as high as, and sometimes higher than teacher assessments. How assessees and assessors are prepared and selected could possibly be an important factor needing further investigation.

Careful preparation of students could be an avenue to minimise the perceived drawbacks of peer-assessment. This is particularly relevant in relation to giving and receiving feedback (Garner et al., 2010). It is pivotal to recognise that some time will have to be devoted to training students on how to give constructive feedback (Topping, 2009). Allowing students to practice giving feedback can be done by monitoring and coaching students. Topping (2009) suggested that keeping a low profile and circulating among students, giving feedback and coaching them as necessary could allow students to be well prepared. The quality of feedback is a critical issue. Improving feedback quality is necessary and could enable students to develop further (Li et al., 2010).

There is a significant amount of literature promoting the use of peer assessment as formative assessment (Casey et al., 2011; Rush et al., 2014), but seldom any information on using it as a form of summative assessment. Even fewer studies use peer OSCAs as a form of summative assessment. The current study makes a valuable contribution, especially in relation to the assessment of simulated clinical skills in an online reliant course of study.

3. Student feedback and staff study

The adaptation of the OSCA tool, described in this paper, is based on current literature, data from a study reported in Bouchoucha et al. (2013a,b) and student feedback. The study had approval from the Charles Darwin University Human Research Ethics Committee (HREC). HREC also gave permission for retrospective student feedback from the SBs to be published. The student comments, used in this overview, were collected from students' feedback forms following SBs run between 2009 and 2012. Feedback forms were anonymous and no demographic data were collected. Comments were sorted into themes and paired with corresponding themes found in the literature and the 2013's study by Bouchoucha et al. Four main themes were identified from the students' feedback forms: efficient use of time, assessment stress, inter-rater reliability and peer judgement validity.

In Bouchoucha et al. (2013b) study, academic staff were asked to identify reasons for the implementation of the OSCA tool, and the value staff placed on this form of assessment method. The study included one on one interviews as well as focus groups. Bouchoucha et al. (2013a) also questioned the suitability of the OSCA tool for the online delivery mode. The study showed that staff considered the reduced timeframe in which students had to learn the designated clinical skills as a problem. Despite the identified drawbacks, the OSCA assessment was acknowledged as having sufficient benefits to warrant its retention in the SBs in a modified format. The resulting modification was the peer OSCA.

There were two main reasons for introducing peer assessments in the SBs. Peer assessment gave students the experience of assessing their peers. Assessing their peers prepares students for the workplace, meets competency standards and develops graduate capabilities/attributes. It also enabled more efficient use of staff time and decreased staff costs (Baid, 2011). When running the lecturer assessed OSCAs it was not uncommon for up to six academics to take two and a half hours to assess 20 students. The peer OSCAs, on the other hand, takes two staff an hour. The peer OSCA affords more efficient use of staff time. The time saved by utilising peer assessments gives students more practice time. Students can be assessed simultaneously thus allowing the reallocation of assessment time to teaching and practice. This benefit was clearly noted in the student feedback:

> *The peer OSCAs was a great idea and I thought worked well. I did not feel as though I was wasting a lot of time waiting around idle. (Student 1)*

> *Continue with peer assessment as I believe it is a great way to learn and improve our skills. (Student 2)*

A common drawback described in the literature is the high stress levels associated with the traditional OSCA (Bouchoucha et al., 2013a; Furlong et al., 2005). Bouchoucha et al. (2013b) found that the lecturer assessed OSCAs were not just stressful for students but also stressful for some of the staff carrying out the assessments. One of the main benefit of the peer OSCA is the decreased stress levels. Students expressed a decrease in stress levels inherent to the peer OSCAs in comparison to academic assessed OSCAs. Students reported that they perceived that their performance levels suffered in the academic assessed OSCAs due to the high levels of stress generated by these assessments. This is significant as increased stress levels have been shown to have a detrimental effect on learning and performance (Quinn, 2000).

> *I tend to become really stressed during OSCAs and as usual the OSCA supervised by the lecturers was very stressful, but the one assessed by my peers was a lot less stressful. (Student 3)*

> *Peer assessment was a brilliant idea and worked well as seemed to be less stressful. (Student 4)*

Another concerning issue identified in the student evaluations as well as in the data collected from staff (Bouchoucha et al., 2013a; Furlong et al., 2005), was the perception that there was poor inter-rater reliability during the assessments. Bouchoucha et al. (2013a) argued that an assessor's assessment will vary depending on their view of the expected level of expertise. Peer assessors, however, have a much more cohesive understanding of what a second-year student is capable of, as they are a second-year student. Bouchoucha et al. (2013a) and Furlong et al. (2005) put forward two more suggestions for discrepancies between assessors; assessors not being up to date clinically, and differing views regarding the importance of various OSCA components. These discrepancies were all noted by the students in their evaluations:

> *With regards to the OSCAs there were 3 facilitators assessing. Three different ways to do an OSCA was a little confusing for students. (Student 5)*

> *Each assessor should assess in the same way how we were taught by the facilitator. (Student 6)*

Nursing procedures should be discussed between the lecturers in order to assess the students in OSCA situation to minimise confusion. (Student 7)

Peer assessed OSCAs seemed to eliminate this perception. Some contrasting views were, however, expressed by students with regards to the reliability of the peer assessed OSCAs. Some students stated that they felt obliged to pass their peers, while others found the process to be very thorough. These contrasting opinions seem to mirror faculty perceptions identified in the literature by supporters and detractors of peer assessment as summarised in Li et al. (2016).

Peer assessment – unsure if this system was adequate as I was tempted to ignore minor errors in assessment. However, major skill errors were my reasons for stopping assessment. (Student 8)

Felt a little obligated as an assessor during peer OSCA to pass fellow student. (Student 9)

Peer OSCAs were run very well and I felt it relaxed the stress levels, but were also strict as in you had to do the OSCAs correctly. (Student 10)

Peer OSCA was a little less stressful than lecturer assessed. My assessor was very good at picking up small errors. (Student 11)

4. Discussion

This paper highlights several positive outcomes associated with the introduction of the peer assessed OSCA. Positive outcomes of the peer OSCA include decreased stress levels, a perceived decreased level of assessor discrepancy and better time utilisation. There are also further potentially positive benefits expressed in the literature worth considering when introducing peer assessed OSCAs, such as the learning that takes place, both from the assessor and the assessee point of view and the increased time on task (Li et al., 2010; Topping, 2009).

The original reason for adopting the peer OSCA was to allow for assessment time to be redistributed to practice time. The implementation of peer OSCAs reduced the time for the OSCA assessment significantly, and this resulted in the availability of more teaching and practice time in the very tightly scheduled SBs.

The second main reason for adopting the peer OSCA was to motivate the students to practice and engage more fully in the SBs. Conducting a mock peer OSCA session the day prior to the official assessment gave students the opportunity to practice their clinical and assessment skills prior to being formally assessed. Some students were very confident in their abilities to perform the clinical skills demonstrated and felt that they did not need to practice. The mock peer assessment session gave students an incentive to practice. Some students that felt they did not need further practice, failed to critically analyse their practice and performed poorly in the mock assessment session. Poor performance and the peer assessment practice enabled students to engage more with the learning and promoted their critical thinking. This supports Bloxhan and West (2004)'s findings.

While redistributing valuable SB time from assessment to practice was the primary reason for introducing the peer OSCA, several other benefits became apparent. One of these was the decrease in stress levels reported by students. Performing difficult tasks in stressful situations can result in mistakes being made (LeBlanc et al., 2005). It is possible that one of the reasons why the pass rate was higher in the peer OSCAs is that students were less nervous. The decreased stress levels are also more appropriate to the students' stage of skill acquisition, and therefore peer OSCAs can be more educationally sound. Completing a mock peer OSCA the day before the assessment may also have contributed to decreased stress levels and possibly improved student satisfaction with the assessment modality.

While some students may perform better under stress, other students become so stressed that their performance suffers. When this happens the stress associated with a formal, lecturer assessed OSCA will negate potential performance (Hemingway et al., 2014). When this occurs some skill or knowledge deficits identified by the assessor may be because of stress, rather than a true lack of knowledge or ability. In this situation lecturer feedback may become somewhat redundant.

As students practice assessing their peers, they are exposed to several different practices, which they need to evaluate against set principles to determine if those practices are sound. This development of judgement and critical thinking skills was also identified by Rush et al. (2012) in their evaluation of peer assessment of clinical skills for first year student nurses. There are no opportunities for this process when being assessed by an academic staff member. Peer assessment therefore encourages students to operate at a much higher cognitive level.

Allowing the students to practice the peer OSCAs with randomly selected partners and skills prior to the final assessment is necessary to enable them to ask questions about the practice of their peers, the assessment tool and the process. This is turn can be an excellent teaching opportunity as it enables students to become familiar with the assessment process, and allows them to refocus on skill practice. It also allows students to break out of familiar friendship groups and ensures that they are interacting with peers they may not normally interact with, therefore widening their views and exposure.

Another unexpected benefit of the peer OSCA was the decrease in students' concerns of discrepancies between assessors. Assessor discrepancies can be a problem with the academic assessed OSCAs despite attempts to address these issues (Najjar et al., 2016).

Whilst feedback regarding the peer assessed OSCAs was predominantly positive, some students were not comfortable assessing their peers. This often resulted from poor preparation and explanation of the process. Making sure that nursing students, and nurses in general, are confident when assessing their peers is very important. Nurses in Australia seeking registration to practice are required to meet the standards set out in registered nurse standards for practice (Nursing and Midwifery Board of Australia, 2016). Standards 2.6 and 2.7 of this document mandate that nurses engage in therapeutic and professional relationships using supervision while fostering a culture of safety and learning. Including the peer OSCAs in the SBs ensures that students can practice these skills in a simulated setting before registration. An inability to demonstrate competency in relation to this standard could raise doubts on the fullness of the education received by the students.

One other major criticisms of peer assessed OSCAs was that peers might not be as good as the academic at assessing the skill (Liow, 2008). This may be a possibility but it needs to be weighed up against the benefits of peers OSCAs. It is important to consider the additional learning that takes place when using peer assessments such as identifying and applying standards and criteria or taking responsibilities for actions (Falchikov, 2007).

Academic staff may be better at assessing students; however, this paper argues that this level of assessment is not needed. Students' performance of clinical skills does not need to be deemed perfect. Perfection is an unrealistic goal as there may be numerous variations in how a clinical skill is performed in the clinical setting. The students are novices and teaching sound principles may be more important than perfecting psychomotor skills. Rather,

assessment should be a general judgment of a student's suitability to attend clinical placement to further practice and reinforce skills. It must be accepted that the students may not be exposed to specific skills in their clinical placement. A student may be assessed as competent by a peer or an academic in the SB. Being assessed as competent becomes redundant if previously mastered skills deteriorate due to lack of reinforcement.

The debrief sessions which occurred after the peer OSCA assessment provided a good opportunity to explore some of these issues with the students as future assessors and to begin to develop strategies to deal with some of the issues, such as feeling obliged to pass a peer. Students' feedback in turn triggered adaptations in the preparation and debrief of students.

5. Recommendations

The following practical recommendations for the successful implementation of peer OSCAs are based on the findings of the examined literature, data from the study by Bouchoucha et al. (2013a,b) and student feedback.

For peer assessed OSCAs to be successfully implemented, it is recommended that students are well prepared. Preparation needs to include familiarity with the skills being assessed as well as having a sound grasp of the underpinning theoretical knowledge. This can be provided to the students through the delivery of theory online and through a good demonstration of the skill, as well as sufficient time allocated to skill practice. A well developed and piloted assessor's guide is also essential, with students needing to be familiar with this guide. Furthermore, practice using the guide to assess prior to the final assessment is essential so that any difficulties can be identified and corrected before summative assessment occurs. The practice of the process is important not only to further familiarise the students with the skill and the assessor's tool, but also to allow students to become comfortable with the assessment situation and process so that no undue stress is added to the process.

A carefully developed assessors' guide should reduce discrepancies between assessors. Each skill requires well-tested, carefully developed assessors' guide for the students to use when they are assessing their peers. Not only will this allow for consistency in the assessments, it will also give students a structure to follow, and insight into what constitutes a good performance. This should enable students to assess the performance of their peers while simultaneously reflecting on their performance and critically appraising it and potentially making changes to it.

The structure of the peer OSCA is also an important aspect to consider. When allocating the assessor/assessee roles, it is preferable that pairs are randomly selected and that the same pair of students does not reverse roles. This decreases stress levels and eliminates the possibility of fear of 'pay back' and the concern that students who know each other will collude in an attempt to pass.

It is also essential that students are prepared to give constructive feedback. Learning how to give feedback will not only enable students to make the learning experience of the peer OSCA valuable, it will also enable students to develop mentoring and preceptoring skills (Goldsmith et al., 2006) and be better equipped when supervising students and staff as a registered nurse.

6. Conclusion

This paper makes an important contribution to nursing education by providing information regarding the assessment of simulated clinical skills in an online reliant undergraduate nursing course. As the mode of delivery for undergraduate nursing courses changes from a predominantly face to face delivery mode to an online reliant mode, there is a need to adapt assessment methods. Several studies have previously examined the use of peer OSCAs as a formative assessment tool (Casey et al., 2011; Rush et al., 2014). This paper, however, outlines the use of peer OSCAs as a summative form of assessment. It is suggested that the use of peer assessed OSCAs develops the student's understanding of the skill, encourages practise, decreases stress thereby increasing performance, gives the student practical experience of assessing their peers and is a more efficient use of time. These positive aspects are put forward as the basis for recommending that the peer OSCA is used to assess simulated clinical skills at all levels of online reliant undergraduate nursing courses. In view of these positive findings, further research examining peer OSCA from the students and staff point of view is warranted.

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