

Peer feedback needs practice and faculty support to be effective in simulation based education.

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Abstract

Background Peer evaluation drives effective self-assessment, encourages autonomous learning and enhances both metacognitive skills and critical reasoning skills. 1 Students, by commenting on the work of others, gain a better understanding of the criteria required for successful performance and develop skills of objective judgment which can be transferred to the assessment of their own work. 2

Methods Peer feedback was introduced to simulated patient history taking consultations. Students were required to evaluate the observed performance and provide verbal feedback to their peers. This was compared to faculty review and end of term examination results. In interview students indicated that they benefited from the opportunity to engage in peer feedback. Students reported that they felt more comfortable receiving feedback from peers than providing feedback to peers. Results 65% of students rated peer performance as excellent which did not correlate with summative OSCE results. When students did mark the borderline grade, a significant difference was found for one individual element of the feedback score. Students ticked "lacked confidence/fluidity" significantly more frequently than any other of the 7 elements suggesting they felt more comfortable relaying this element of performance feedback as it did not address content understanding or knowledge. Conclusion Ability to give constructive feedback should be viewed as an essential skill but for success students need to be taught how to give effective peer feedback. Emotions and loyalties affect student's unwillingness to find fault with a fellow student's work. Students may need more opportunities to conduct peer assessment to become familiar and comfortable with this process. Co-operative learning in simulation can combine with peer feedback to produce effective social constructivist approaches; however faculty input is required to monitor and validate the feedback.

Background

Medical education is rapidly evolving and the last decade has seen major changes in terms of how medical doctors are educated with undergraduate medical curricula evolving from predominantly didactic, discipline-based formats to case based, patient centered, integrated and centrally administered programs. New teaching methods adopted in response to information overload on traditional medical courses employ small group experiential, and facilitated learning instruction methods which incorporate an increased emphasis on self-directed learning. Simulation based education (SBE) is now a central thread in the fabric of health professional education¹ having gained tremendous momentum over the last decade as a powerful method of reinforcing clinical knowledge, improving communication, and teaching decision-making skills.

Learners reach competence through deliberate and repeated practice, breaking down skills into parts and practicing these parts repeatedly whilst eliciting feedback and reflecting on performance to guide the focus of subsequent practice. Success requires students to acquire reflective learning skills, to assess accurately their own strengths and weaknesses and to take responsibility for their own professional development. Educators are increasingly encouraging their students to take responsibility for not only their own learning but also for that of their peers. The peer evaluation process is suggested to drive

effective self-assessment and encourage autonomous learning. Students, by commenting on the work of others, gain understanding of the quality criteria required for successful performance and develop skills of objective judgment which can be transferred to the assessment of their own work^{2,3}. By participating in peer assessment students gain enhanced metacognitive skills and critical reasoning skills⁴.

Objectives

This paper addresses collaborative learning in small groups with simulated patients (SPs) and examines the effect of peer feedback in creating collaborative learning groups for SBE.

The key objectives of this work are:

- To understand what opportunities students require to become familiar, comfortable and effective with the peer evaluation and feedback process and to discuss issues that restrict full participation.
- To examine how simulation learning might be enhanced to make the experience more purposeful and valuable for observers, and help them contribute more confidently and specifically to feedback discussions.
- To understand what tools are required to help students observing their peers to become better attuned to what is going on and at noticing what is important.

Methods

Study design

This study was designed as a sequential transformative mixed-methods approach employing constructivist grounded theory⁵. A realist evaluation approach was taken focusing on causal mechanisms and exploring the necessary conditions for success.

Setting

The study was carried out with third year medical students at the Royal College of Surgeons in Ireland (RCSI). Ethical approval for the study was obtained from the RCSI ethics committee (# REC1641). The script and topic guide, reviewed by the ethics committee, allowed the facilitators to explain to participants the purpose of the focus groups, review group rules and ensured reliability across the different focus groups by guaranteeing that all groups were conducted in the same manor.

Participants and study size

254 students participated in a formative 4-station history taking observed structured clinical exam (OSCE) on campus in groups of four where each student observed for three stations and took a SP's history in one station. Each OSCE station was of 10 min duration followed by 3 minutes for feedback from the student observers and 3 minutes from the SPs. Students were expected to understand the standard required for competency and compare current levels of performance with that standard.

Preparatory study material incorporating stepwise methodologies and instructional videos were provided on-line. A formative peer feedback evaluation was implemented as part of a 360-feedback process, which included feedback from peers, the clinical tutor and the SP at the completion of the history taking interaction. In addition, an on-line self-reflection exercise was completed when viewing their history taking video recording using an electronic form based on the Gibbs cycle⁶. Mindful of Miller's research⁷ which demonstrated that peer feedback was increased by providing students with specific prompts, students were provided with a peer observation marking sheet (Table 1)⁸ with descriptors. Students observing the station were required to assess performance and feedback to their peers. Approximately seven weeks later upon completion of their clinical attachment each student attended a record of in-year performance (RiYP) meetings where they were asked to reflect on their experiences of the peer evaluation and their perceived usefulness of these sessions.

Data Variables

The completed peer evaluation forms were compared with faculty evaluation of the same student SP encounters using the same assessment forms. The summative marks for history taking at the end of term exam are also presented. In addition, results from the course evaluation questionnaire are presented.

Two questions were asked in semi-structured face-to-face interviews conducted by CC with all 254 students conducted as part of the student's record of in-year performance (RiYP) meetings. This was a five minute commentary at the end of an in formal feedback meeting.

Three follow on focus groups with a total of 14 students were carried out (CC, AA) to further explore key concepts using questions constructed around the themes identified in the interviews. Students were invited by email to volunteer to attend these focus groups. Students were provided a participant information leaflet that explained the reasons why the study was being carried out, by whom and how. Participants signed a consent form and attended one focus groups which took on average forty five minutes to complete

Bias

Selection bias maybe considered a limitation of this study in that students volunteered for the focus groups. Voluntary participation was a condition of our study ethics permission. However, the full cohort of students did participate in individual interviews as part of their course. The principle reason for this work is to understand how learners cooperate in simulation to drive learning and as a simulation specialist and principle investigator in this work CC may unconsciously add an element outcome-reporting bias. Participants had two scheduled classes with CC prior to the interviews and focus groups and knew her as their teacher. AA was a class mate of one cohort of students.

Analysis

The interview answers were captured by note taking and focus groups were fully recorded by voice recorder. Transcripts were not returned to the participants and participants did not provide feedback on the findings. Data was anonymized and although quotes are provided in this paper the quotes this are not linked to individual participants. Data was transcribed and open coded using simple descriptive analysis⁹ to develop categories by two researchers (CC, AA) independently of each other. The coded fragments were compared and discussed to refine the coding structure and then all transcripts were re-coded according to the agreed framework. Discussion with the students on the research team (OW, AA) gave voice to different dimensions from various aspects of the emerging themes and allowed a more nuanced interpretation. Triangulation by cross verification of codes between the interviews and focus groups facilitated validation and consistency of emerging themes and confirmed data saturation. Axial coding identified connections and relationships followed by selective coding to produce a discursive theoretical framework.

Results

From the course evaluations the majority of students agreed that simulation practice enhanced their consultation skills and clinical application of their medical knowledge. Students agreed that the simulated sessions provided a realistic and safe environment to practice communication and history taking skills (Figure 1).

From interviews and focus group discussions, key descriptive themes were deduced several of which have been previously been identified¹⁰ (Table 2)

Peer feedback is valued

Students recognized value in peer feedback and indicated that they benefited from receiving peer feedback.

“Yes it is really important because there is something that you do not notice that you do, that other people can see, then you get an idea about the bigger picture rather than the thing that you are focusing on”

Students appreciated the opinions of their peers in the main and reported that having completed the exercise, they are more likely to practice history taking presentations at the hospital site with a colleague and to request peer feedback.

Nervous and embarrassed

Students generally value anonymity and some students reported that they were nervous and embarrassed having to perform in front of their colleagues.

“There is the nerves when you walk into a room and you are like ummmmmmm?”

Students reported that they are more comfortable receiving feedback from peers than providing feedback to peers. Giving peer feedback was an unfamiliar and stressful activity for the students and the video recording of the simulated sessions added further to their stress.

“got stressed – like you wouldn’t imagine, honestly”

Emotions and loyalties

Emotions and loyalties affect student’s unwillingness to find fault with a fellow student’s work. Students are reluctant to damage personal relationships, and they struggle with the prospect of embarrassing or insulting their peers whom they have to continue to study with for the rest of their program.

“It’s not worth it”.

“I do not want to offend them and then be stuck with them for whatever amount of time and then they’re gonna hate me”

“Also when we first met everyone in the peer group no one knew each other. We did not know each other so everyone was afraid to say what they want to say as advice”

Preparation and skills required to give feedback

The overarching theme that emerged was that students felt unprepared to provide good quality feedback. There was significant discussion about the quantity, standardization and emphasis of the feedback.

“We didn’t know what we are doing and what is expected so the feedback was not valuable”

“There is an imbalance”

“So, certain skill sets are required”

“... I think feedback should be phrased in a kind of certain terminology that should be something that is measurable and achievable “

Faculty must facilitate learner readiness for this kind of group work in SBE and provide scaffolding to build skills and guidelines for team member performance¹⁷. Students requested more preparation and instruction on the process of giving feedback.

“If they gave step-by-step responses to, you know, respond to”

"A session each semester to introduce it"

"There should be feedback on the feedback"

Students also demonstrated significant concern for the wellbeing of other students as a result of poorly constructed feedback.

"You do not want to discourage them at all. Maybe they are better in other situation"

Faculty involvement

Attitudes towards peer feedback varied depending on a student's previous educational experiences and culture. The belief that formal education is about learning from experts is deep-rooted in the student psyche. The theme of faculty oversight or requiring more faculty input was recurring.

"We went and observed students taking a history that was the extent of it – so there was no actual teaching"

"I need to hear ...more focused and reliable advice and this will be from the tutor"

"Having the tutors to give us feedback is more reliable because they have more experience"

"But we need like- improved and higher knowledge to correct us"

Forming and Norming

An insight into the importance of group formation emerging from the discussions. Students want faculty to form their simulation teams.

"No no no. it is too much drama in doing your own group.

Forced into it is better"

"If we made our own groups we will not take it seriously"

"Gonna be like- oh yeah that was great and we move on with our lives"

Co-operative learning teams

A safe learning environment and thus effective learning through peer feedback in SBE is dependent on the formation of cooperative learning teams. Students reported that this was happening gradually over repeated experiences. The key to forming these groups effectively and accelerating the breaking of barriers is pre-training on the format of tasks. The value placed on peer feedback also grows as relationships grow within the group.

“Whereas now I am with these people that I have spent so much time with, they tell me stuff that I need to improve, - I take it as a thank you, you guys are trying to help me. Because they are my friends and you are not as nervous around them any more either”

From the video recordings, it is evident that students are more inclined to provide constructive feedback verbally after a session than complete the paper evaluation form. The quality and quantity of interactivity and feedback vary dramatically but as there was an expectation of input from the student who had completed the task each observing student had to engage with the process and produce comments. The construction of peer feedback is a high-level activity that is cognitively demanding and engagement and collaborative learning were evident.

In written feedback 65% of students rated peer performance as excellent-“everything done correctly”, which did not correlate with the tutor assessment of the same event or the summative end of term exam results for history taking. When students did mark the borderline grade, a significant difference was found for only one individual element of the feedback score. Students marked *“does not show the appropriate level of confidence/fluidity”* significantly more frequently than any other of the seven elements suggesting they felt more comfortable relaying this element of feedback as it does not point to understanding or knowledge (Figure 2).

Discussion

The literature on peer review has focused on students' ability to grade the work of others. From our results this approach may be flawed as our student awarded grades did not correspond to faculty grading. However, opportunities for students to engage in interactive and collaborative activities with their peers have been shown to contribute to better learning outcomes, including the development of higher order thinking¹¹. SBE is ideally placed to provide these opportunities and we have previously demonstrated that students like discussing learning points with peers in SBE¹²

In constructivism, faculty and peer support contribute to learning through the concepts of scaffolding, cognitive apprenticeship, tutoring, cooperative learning and learning communities^{13,14}. SBE in small groups has the potential to change both the students' and faculty's role through shared inquiry thus "dissolving the Atlas Complex" where faculty is normally required to shoulder the entire responsibility for the learning process¹⁵. However our work and others have found that learners viewed faculty members as the ultimate knowledge validators¹⁶.

Critical thinking, reasoned evaluation and leadership skills are core competencies which may be developed through the collaborative learning experience of peer observation and feedback in the context of clinical simulation. The skills gained from the experience of collaborative learning are highly transferable to team-based work environments¹⁷.

An ability to construct feedback is a fundamental requirement in professional settings, and learning how to give constructive feedback should be viewed as an essential skill, and for success, students need to be taught how to give effective peer feedback. Peer observation and feedback moves away from learning as an individual activity and students need many opportunities to conduct peer assessment to become familiar and comfortable with this process.

Reflection is an essential activity in developing the cognitive schemata for problem solving and decision making in medical communication, fostering the application of different behaviors, actions and outcomes if the situation was to be encountered again^{18,19}. However, critical self-evaluation is vulnerable to cognitive bias and often avoided^{20,21}. For accuracy, meta-cognitive judgements of one's own performance should be accompanied with systematic and intentional elicitations of the views of others²².

Formative assessment is an invaluable part of the learning process if the learner is able to understand the feedback and act upon it. Constructivists regard learning as an active process where learners discover principles, concepts and facts for themselves and constructivist models stress the need for collaboration among learners¹⁸. Peers dealing with the same problems can help each other in finding viable solutions. Research has demonstrated that allowing learners to form their own groups facilitates positive group dynamics²³. However, our findings suggest that students will participate more fully if the groups are formed for them.

Facilitators need to incorporate a variety of instructional strategies to improve the quality of group collaboration¹⁷. Scaffolding is important in preparing learners for small group simulation and this can be accomplished by sequencing activities which build on previously learned skills, ensuring learners have acquired the confidence and skills to be successful.

Students need to be taught the necessary skills for effective collaboration, particularly those skills that will help them succeed in a group environment^{24,25}. The experience of observation can equip students with the meta-skills to learn by watching^{21,26}. Being involved in peer feedback, can reframe student's views of feedback as a dialogic, participative process, and help them begin to recognize the importance of taking deep approaches to learning and viewing the subject matter through a different lens²⁷. To aid translation of the simulation experience to the clinical environment, students need to be supported with practical strategies to direct their attention and develop a nuanced professional gaze that renders their work environments more pedagogically rich²⁸. Our students report altered attitudes to working with fellow students on the wards indicating that they would be more likely to request a peer to observe them and provide feedback having completed the simulation exercises.

Tools are required to help students who are observing their peers during simulation become better at noticing what is important and more attuned to what is going on. Tailored resources will help to make the simulation experience more purposeful and valuable for student observers, and help them to contribute more confidently and specifically to feedback discussions.

Conclusions

In conclusion, co-operative learning in SBE can be augmented by peer feedback in small groups to produce effective social constructivist approaches. Engaging students in reviewing and giving feedback to each other in a safe simulated environment may help develop social cohesion, foster learning communities and drive meta-learning. There is significant variation among students with respect to skill decay and this relates directly to practice²⁹. Peer feedback in small groups following SBE could facilitate the operationalization of the repeated practice required for competent clinical skills training in large undergraduate programs. Learners become aware and understand the experience of learning itself and the requirement of repeated practice to improve in addition to subject knowledge. The ultimate goal is to foster the habit of continuous reflection and evaluation of personal performance for continual professional development. Modern healthcare needs staff who are capable of working, consulting, negotiating opinions, and being productive in teams thus the design of the educational experiences that require participants to collaborate is essential.

Abbreviations

(OSCE) observed structured clinical exam

(SBE) Simulation based education

(SPs) simulated patients

(RiYP) Record of in-year performance

Declarations

Competing Interest Statement

Authors' contributions

All persons who meet *authorship* criteria are listed as authors, and all authors certify that they have participated sufficiently in the work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript.

All authors approved the submitted version and agreed both to be personally accountable for the author's own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature.

Competing interests. The authors whose names are listed declare that they have no affiliations with or involvement in any organization or entity with any financial *interest* in this work and have no conflict of interest. Claire Condon is a member of the editorial board for BMC Medical Education.

Ethics approval and consent to participate.

This work received ethical approval from the Royal College of Surgeons in Ireland's Ethics Committee. Informed written consent to participate in the study was obtained from each participant.

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Authors Contributions

GO *Simulation teaching and assessment, Study design, Manuscript writing and editing.*

OW *Data transcribing and analysis*

CS *Simulation patient training and assessment*

CM *Manuscript editing*

AA *Recruitment Data collation, transcription and analysis*

PT *Simulation teaching, and assessment*

ADH *Study design, Manuscript editing*

CC *Study design, Ethics application Simulation, teaching and assessment, Manuscript writing.*

Consent for publication

N/A

Availability of data and material

All data analysed during this study are included in this published article. The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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References

1. McGaghie WC, Issenberg SB, Petrusa ER, Scalese RJ (2016). Revisiting A critical review of simulation-based medical education research: 2003-2009'. *Med Educ.*; 50(10):986-91.
2. Ballantyne R, Hughes K, Mylonas A. Using an Action Research Process: Developing Procedures for Implementing. *Assessment & Evaluation in Higher Education*. 2002; 27(5).
3. Dochy, M. Segers, D. Sluijsmans (1999). The use of self-, peer and co-assessment in higher education: a review. *Stud High Educ*, 24, pp. 331–350
4. Hulsman RL, Harmsen AB, Fabriek M. Reflective teaching of medical communication skills with DiViDU: Assessing the level of student reflection on recorded consultations with simulated patients. *Patient education and counseling*. 2009; 74(2):142-9.
5. Glaser, B. (1992). *Basics of grounded theory analysis*. Mill Valley, CA: Sociology Press.
6. Gibbs, G. (1988) *Learning by Doing, A Guide to Teaching and Learning Methods*. Oxford Centre for Staff and Learning Development, Oxford Brookes University, Wheatley Campus, Wheatley, Oxford, UK, OX33 1HX. ISBN (ePub Version) 978-1-873576-87-0
<https://thoughtsmostlyaboutlearning.files.wordpress.com/2015/12/learning-by-doing-graham-gibbs.pdf>
7. Miller PJ. The effect of scoring criteria specificity on peer and self-assessment. . *Assessment and Evaluation in Higher Education*. 2003; 28(4):383-95.
8. The Royal College of Paediatrics and Child Health (RCPCH) website <http://www.rcpch.ac.uk/training-examinations-professional-development/assessment-and-examinations/examinations/clinical-e-3>.
9. Sandelowski, M. (2000). Focus on research methods combining qualitative and quantitative sampling, data collection, and analysis techniques. *Research in nursing & health*, 23, 246-255.
10. Cushing C., Abbott S, Lothian D., Hall A., M. R. WestwoodM.R. (2011)Peer feedback as an aid to learning – What do we want? Feedback. When do we want it? Now!, *Medical Teacher*, 33:2,e105-e112, DOI: [10.3109/0142159X.2011.542522](https://doi.org/10.3109/0142159X.2011.542522)
11. Brindley J.E. and Walti C. (2009) *Creating Effective Collaborative Learning Groups in an Online Environment*. *International Review of Research in Open and Distance Learning* Volume 10, Number 3. ISSN: 1492-3831 <https://files.eric.ed.gov/fulltext/EJ847776.pdf>
12. Syed Ali Naqi, Abdelmonim Salih, Firas Ayoub, Michael Quirke, ADK Hill , Claire Condron. (2017). Evaluation of Simulation for Peripheral Arterial Examination Teaching to Medical Students. *BMJ Simulation and Technology Enhanced Learning*. doi: [10.1136/bmjstel-2017-000200](https://doi.org/10.1136/bmjstel-2017-000200)
13. Brown A.L. 1994. The advancement of learning. *Educational researcher*, 4-12
14. Rogoff B. 1998. Cognition as a collaborative process. In W. Damon, D. Kuhn& R.S. Siegler (Eds.), *Handbook of child psychology* (5th ed., Vol.2).New York: Wiley.
15. Svinicki M.D. (1991) Practical implications of cognitive theories. *New directions for teaching and learning* (45) 27-37 <https://doi.org/10.1002/tl.37219914506>
16. Ng S.L, Kangasjarvi E., Lorello G.R., Nemoy L., Brydges (2019) There shouldn't be anything wrong with not knowing': epistemologies in simulation <https://doi.org/10.1111/medu.13928>

17. Chapman, C., Ramondt, L., & Smiley, G. (2005). Strong community, deep learning: Exploring the link. *Innovations in Education and Teaching International*, 47(3), 217-230.
18. Duffy T.M., Jonassen D.H. (1992) Constructivism: new implications for instructional technology. M. Duffy, D.H. Jonassen (Eds.), *Constructivism and the technology of instruction: a conversation*, Lawrence Erlbaum Associates, Hillsdale, NJ pp. 3–6.
19. Finlay, L., (2008) Reflecting on reflective practice. PBPL paper 52. The Open University's Centres for Excellence in Teaching and Learning. <http://www.open.ac.uk/oucetl/resources/pbpl-resources/finlay-l-2008-reflecting-reflective-practice-pbpl-paper-52>
20. Eva K. W., Regehr G.. (2005) Self-assessment in the health professions: a reformulation and research agenda. *Acad Med*, 80 (Suppl.) (2005), pp. S46–S54
21. Epstein R.M., Siegel D.J, Silberman J. (2008), Self-monitoring in clinical practice: a challenge for medical educators. *J Contin Educ Health Prof*, 28 pp. 5–13
22. Rudy D.W., Fejfar M.C., Griffith C.H., Wilson J.F. (2001) Self- and peer assessment in a first-year communication and interviewing course. *Eval Health Prof*, 24 (2001), pp. 436–445.
23. Chapman K., Meuter M., Toy D., Wright L. (2006) Can't We Pick Our Own Groups? The Influence of Group Selection Method on Group Dynamics and Outcomes. *Journal of Management Education* 30(4) DOI: 10.1177/1052562905284872
24. Curtis, D. D., & Lawson, M. J. (2001). Exploring collaborative online learning. *Journal of Asynchronous Learning Networks*, 5(1), 21-34. Chapman, Ramondt, and Smiley (2005).
25. Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom*. San Francisco, CA: Jossey-Bass.
26. Biggs, J.B., (1985). The role of metalearning in study process . *British Journal Education Psychology* vol 55(3) 185-212 . <https://doi.org/10.1111/j.2044-8279.1985.tb02625.x>
27. Sambell K. (2011) Rethinking feedback in higher education an assessment for learning perspective Published by The higher Education Academy Education Subject Centre. ESCalate. <http://www.leeds.ac.uk/educol/documents/207321.pdf>
28. Hopwood, N. and Rooney, D. and Boud, D. and Kelly, M. 2016. Simulation in Higher Education: A sociomaterial view. *Educational Philosophy and Theory*. 48 (2): pp. 165-178.
29. Offiah G, Ekpotu LP, Murphy S, Kane D, Gordon A, O'Sullivan M, Sharifuddin SF, Hill ADK, Condron CM. Evaluation of medical student retention of clinical skills following simulation training. *BMC Medical Education*. 2019;19(1):263.

Tables

Due to technical limitations the Tables are available as a download in the Supplementary Files.

Figures

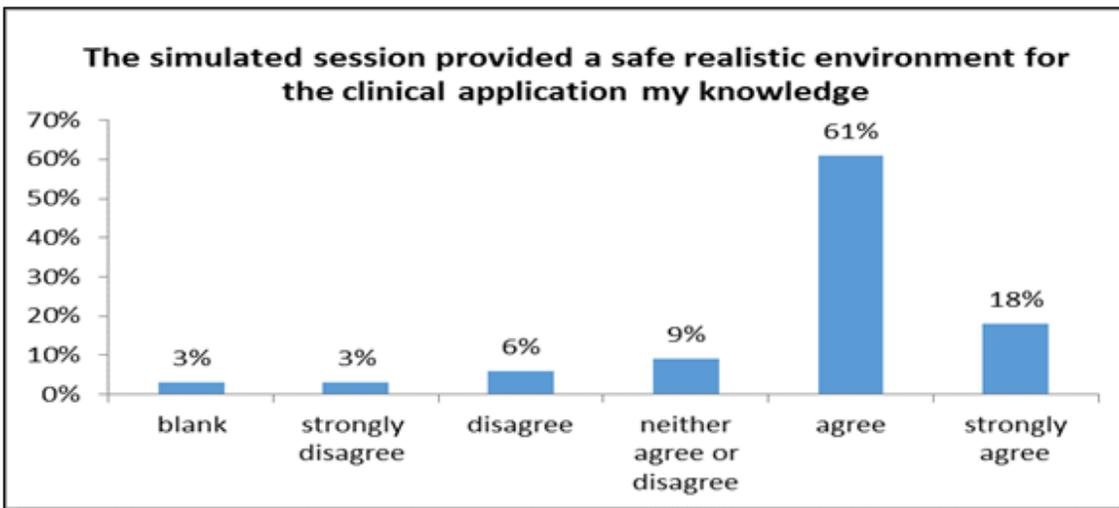
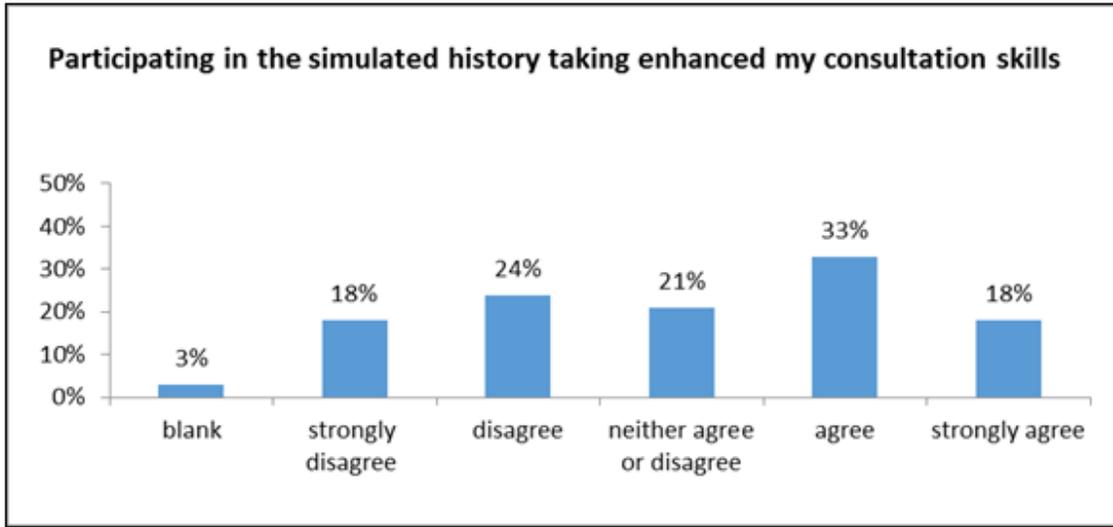


Figure 1

Student satisfaction with simulation experience The course evaluation questionnaire was completed at the end of the week. Each student was required to rate their satisfaction with the simulated learning experience. Data is expressed as a percentage of completed questionnaires.

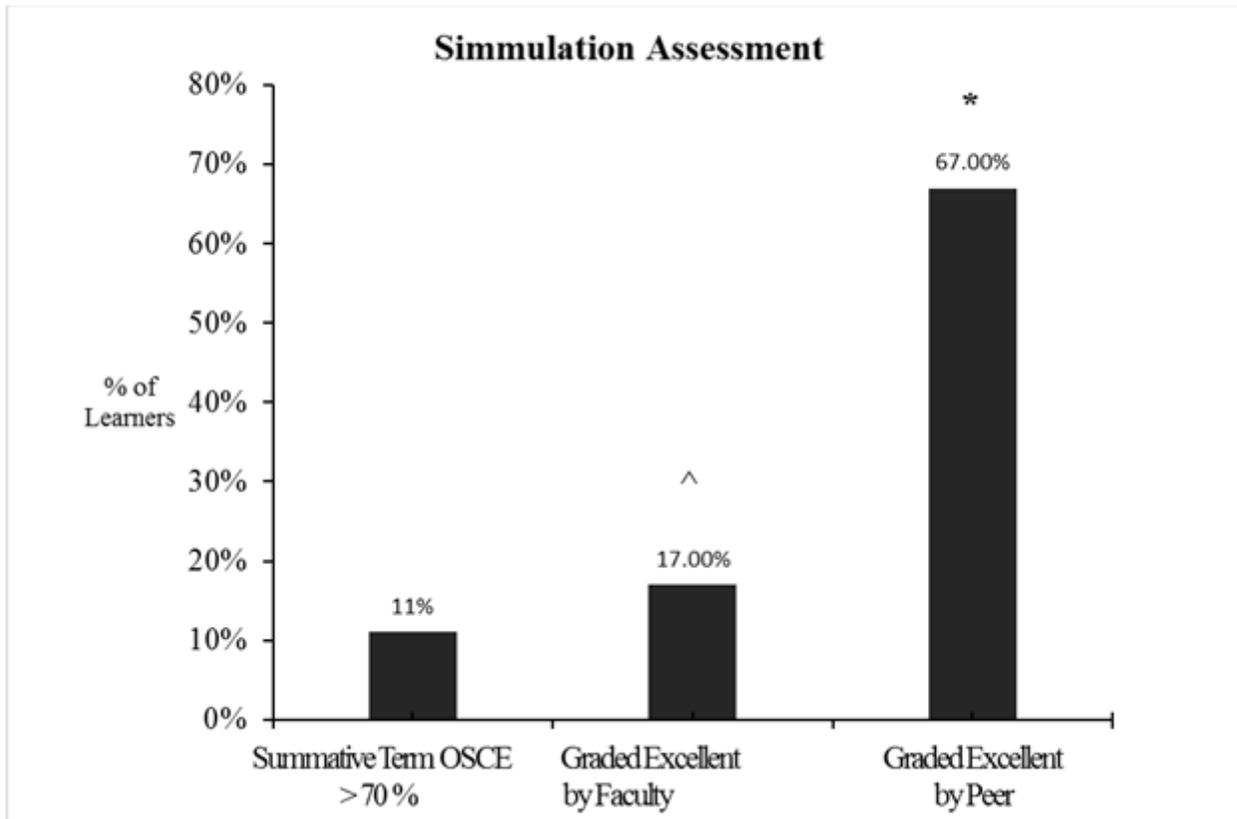


Figure 2

Peer assessment marks compared to formative and summative faculty assessment. Peer assessment marks were compared to the marks of the faculty facilitators who observed the session and to the end of term summative OSCE scores for the history taking station. No correlation was observed between the peer assessment score and the faculty facilitator's score. No correlation was observed between the peer assessment score and the end of term OSCE *: z score = -9.7 vs summative OSCE. The faculty facilitator's mark did correlate with the OSCE score. ^: z score = 1.0 vs summative OSCE. N=254

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Tables.pdf](#)