Report Template

ABOUT THE PROJECT

Title: What impact does the physical learning space have on peer learning?

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Keywords (Max 4) Learning spaces, peer review, student engagement.

OVERVIEW

Overview, Aims and Context (the rationale including underpinning pedagogy) (summarise the activity in 2 or 3 sentences, max 50 words)

Little attention has been given to the physical environment and university lecturers still find teaching curtailed by inflexible learning environments[1,2]. This project aimed to help students engage in active learning and aimed to introduce students to the type of peer review that they will undertake when qualified professionals.

Description (a brief description of the activity; and how you have used innovative pedagogies and approaches in the curriculum design; max 200 words)

Compulsory peer review activity for qualified optometrists was introduced by the General Optical Council (GOC, the regulatory body for Optometry in the UK) in January 2012. Using case records, practitioners are required interact with a small group of peers in order to reflect on their own and others clinical and ethical decision making and record keeping[3]. Early engagement with this process would be beneficial to undergraduate Optometry students and other undergraduates from healthcare related degrees. Alongside this, there is good evidence to support the use of peer review in higher education[4] and student participation in a peer review process clearly aligns with Ulster University's Learning and Teaching Strategy which encourages the use of student-centred learning spaces.
In recent years technological advances have played a pivotal role in teaching in the higher education sector, however there is scant evidence regarding the role that the physical environment plays in student learning[1,2].

Design (methodological approach (qualitative and quantitative evaluation)
Ethical approval was granted from the School of Biomedical Sciences Ethics Filter Committee. Data collection took place during Semester 2 of the 2015-16 academic year on the Coleraine campus at Ulster University.
Participants: All final year BSc Optometry undergraduate students were eligible to take part. Participants were required to attend a Peer Review Process information session of approximately one hour duration delivered by the project lead. This session described the Peer Review Process so that students could engage fully.
Procedure: Participants attended six timetabled Peer Review sessions named Session 1a, Session 1b, Session 2a, Session 2b, Session 3a and Session 3b.
Session 1a and Session 1b were delivered in a traditional teaching environment (rows of desks in a classroom) and were managed by the project lead. Participants were presented with a video of a patient encounter with accompanying hardcopy case record notes (Case study A). Participants were then given 15 minutes to consider the optometric patient case study and following this the project lead facilitated a discussion regarding said case study with the whole group of participants.
Session 2a and Session 2b were delivered in the one of the new classrooms on the Coleraine campus at Ulster University. Participants were randomly selected into small groups of four to five individuals and allocated a table within the learning space. Each group was asked to nominate one facilitator. Participants were presented with a video of a patient encounter with accompanying hardcopy case

record notes (Case study B). Participants were given 15 minutes to discuss the optometric patient case study within their individual groups and following this each group facilitator lead discussion regarding said case study. The project lead observed the group work during the process and offered support if necessary at the discussion stage.

Session 3a and Session 3b were delivered in the new social learning space outside one of the new classrooms on the Coleraine campus at Ulster University. Participants were randomly selected to small groups of four to five individuals and allocated an area to work within the learning space. Each group was asked to nominate one facilitator. Each group was given a tablet to use within the teaching session. Participants were presented with a video of a patient encounter with accompanying electronic case record notes (Case study C). Participants were given 15 minutes to consider the optometric patient case study and following this each group facilitator lead a discussion regarding said case study. On these occasions (Session 3a and 3b), the project lead was available remotely for support if necessary.

Sessions 2a, 2b, 3a and 3b followed GOC Peer Review Group guidelines[5]. The project lead attended the first four sessions and was situated at a remote location for the final two sessions. Following completion of the six sessions, participants were asked to provide feedback using questionnaires and interviews/focus groups.

Questionnaires.

Following completion of all the teaching sessions a questionnaire was completed by the participants who had attended at least one of each type of session. The questionnaire comprised of six questions which were asked about each of the session types (1, 2 and 3) (Figure 1) and one final question which asked which session type was considered by the participant to be the best learning environment. It used a Likert type grading system (5=strongly agree, 4=agree, 3=neither agree or disagree, 2=disagree, 1=strongly disagree) and was based on a previously published tool used to assess nursing students[6]. Questions aimed to assess participants' level of engagement with the three different teaching session types.

I found the teaching session beneficial to the learning experience.
Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

The session helped me interact better with my peers.
Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

The session helped me understand the peer review process.
Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

The session helped me interact better with peers who I would not normally engage with in my learning.
Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

The session helped me improve my communication skills
Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

I was able to ask questions about my learning at the session.
Strongly agree Agree Neither agree or disagree Disagree Strongly disagree

Figure 1: Peer review questionnaire

Statistics

Data were entered into a SPSS spreadsheet and were then transferred to intercooled Stata 13 software (StataCorp LP, College Station, Texas, USA) in order to carry out statistical analyses. Descriptive statistics were used to summarise the data with mean scores calculated for each question.

RESULTS

Findings and Conclusions: (provide information on results/findings, evidence and conclusions)
All final year students (n=32) enrolled on the project with 29 students participating in all six sessions. The remaining three students attended at least one of Session type 1, 2 and 3. Data were analysed for those with full attendance at all sessions (n=29).
Quantitative analyses are described in Table 1 below. Significance was achieved in four out of the six questions with session type 2 being the most favorable amongst the participants for benefit to the learning experience; interaction with peers; interaction with peers not normally engaged with and improvement of communication skills.

Question	Mean score Session 1 (+/-SD)	Mean score Session 2 (+/-SD)	Mean score Session 3 (+/-SD)	Kruskal-Wallis rank test P value
I found the teaching session beneficial to the learning experience.	4.14 ±1.04	4.28 ±1.01	3.71 ±1.05	0.04*
The session helped me interact better with my peers.	3.71 ±0.71	4.17 ±0.81	3.92 ±0.84	0.04*
The session helped me understand the peer review process.	3.79 ±0.83	4.07 ±0.86	3.82 ±0.77	0.21
The session helped me interact better with peers who I would not normally engage with in my learning.	3.11 ±1.06	4.17 ±0.71	3.71 ±0.72	0.00**
The session helped me improve my communication skills	3.36 ±0.87	3.96 ±0.96	3.92 ±0.90	0.02*
I was able to ask questions about my learning at the session.	4.21 ±0.98	4.32 ±0.91	3.82 ±1.02	0.06

Table 1: Median questionnaire scores for Session types 1, 2 and 3.
***Significant at the 5% level. **Significant at 1% level**

Response to the final question which asked which session type was considered by the participant to be the best learning environment showed that 69% (n=20) preferred session type 2, 28% preferred session type 3 (n=8) and one participant preferred session type 1 (3%). Overall the participants found the teaching session type B statistically significantly beneficial to the learning experience ($p<0.001$). Participants were also given the opportunity to provide written and oral feedback following the teaching sessions. This qualitative data is illustrated in the example feedback below:

‘I really liked the second type of teaching session – it helped me think for myself and then Karen could help us out if we weren’t sure’
‘The session in the area outside the classroom [Session type 3] was good fun but I maybe didn’t learnt as much as I did in the other place’
‘It is nice and airy and bright in the seated area [Session 3]’
‘I really liked working with other people from my class who I don’t usually speak to’
‘It is good to think for yourself instead of listening to a lecture all the time’
‘I think this would be good in other optometry modules’
‘it was good to have a change in the way we are taught’
‘I think I learnt a lot in the middle type session [Session 2]’
‘I like this rather than listening to a lecturer all the time but you need to know what you are doing’
‘the middle session [Session 2] is the best’
‘I think I learnt the most in the middle session [Session 2]’

Overall the data demonstrate that the benefit to learning was most positive in Session type 2.

EVALUATION

Reflective Commentary (this should draw from your experience and identify what worked well and what were the key challenges;)
At the start the students were not overly keen to participate as this was timetabled as an extra six weeks on top of their timetabled teaching. However, their interest was piqued by the Peer Review Process information session and they very quickly recognised the value of the sessions so attendance throughout the process was good.
The students were also initially not keen to work with unfamiliar students but once the first of these sessions had taken place they found that they really enjoyed it.
There are multiple benefits of this type of learning experience: improved intraprofessional communication, early career engagement with peer review, improved understanding of patient management decision making and better understanding of how to approach sessional examination and OSCE-type questions.

Student Engagement (to be completed by the student partner): Impact on learning experience and sense of belonging;
The students who were facilitators attended a focus group which resulted in the following feedback:
‘All the students in our year were happy to take part in the project as they could see it would help their learning for OPT505. Most students felt that six weeks was a big commitment but once they attended the first session they recognized the value of the project. Attendance was very good throughout the six weeks and the students all felt that they had learnt a lot about how to consider case studies and how to make patient management decisions at the end of the project. We really enjoyed the project and learnt lots’.

Learning Environment and Engagement: your views on the appropriateness and effectiveness of physical spaces for engagement and virtual spaces to enhance learning**.**
I found the new physical spaces at Coleraine to be an excellent environment to enhance learning. The students engaged well and enjoyed small group work with students who are not within their usual social group. This environment and set-up mirrors the peer review process that practitioners are required to engage with as qualified professionals.

Impact (please provide evidence of the impact on learning and/or teaching)
Module evaluation of OPT505 (Patient Management) (The project was carried out within this module) described a positive response to the learning experience. Whilst the module evaluation process did not directly question the impact of the learning experience, the following comments were provided:
‘I really liked the time spend on case study work’.
‘The case study work meant that I talked to students that I don’t normally work with and I liked working in these groups’.
‘The case studies really helped me to prepare for my exams’.
‘Karen spent a lot of time helping us learn how to do the case studies’.
‘I felt very well prepared for my exam’

STRATEGIC DEVELOPMENT

Transferability (consider how this activity might be used by colleagues in other schools/faculties and if it could be developed for a further Faculty interdisciplinary learning project)
This activity could be used within any modules which give consideration to case studies, in particular within healthcare-related courses which incorporate peer review within future continued professional development.

Dissemination (internal and external) (School and Faculty briefings, workshops, resources developed)
I plan to present this piece of work at a Vision Science Research Group meeting in the future.
I have been asked to contribute an article for a special issue of Optometry in Practice (due to be published in February 2018). This article will focus on the peer-review aspect of the project.

SUPPORTING INFORMATION

References (using Harvard style, list literature and other resources that influenced your work)

1 Matthews KE, Andrews V and Adams P. (2011) Social learning spaces and student engagement. Higher Education Research & Development. 2011;30:105-120.
2 Oblinger, D.G. (2006). Challenging Traditional Assumptions and Rethinking Learning Spaces. In Oblinger, D.G. (Ed.), *Learning spaces* (pp. 2.1–2.12). Accessed March 22, 2017, from EDUCAUSE http://www.educause.edu/LearningSpaces
3 https://www.optical.org/en/Education/enhanced-cet-post--2012/peer-review-and-distance-learning.cfm
4 Van den Berg, I., Admiraal, W. and Pilot, A. (2006). Design principles and outcomes of peer assessment in higher education, *Studies in Higher Education, 31*(3), pp.341-356.
5 https://www.optical.org/en/Education/CET/peer-review.cfm
6 Levett-Jones T, Fahy K, Parsons K and Mitchell A. (2006) Enhancing nursing students' clinical placement experiences: A quality improvement project. Contemporary nurse, 23:1, 58-71.

Acknowledgements (support staff or departments that supported you detailing specific areas of assistance and contact details)
N/A

Attachments List and attach relevant documents/images in support of project activities
Photographs of Session 2

Photographs of Session 3