THE BENEFITS OF PEER FEEDBACK IN AN ONLINE ENVIRONMENT

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ABSTRACT

This paper discusses the advantages to be had by structuring assignments and activities in the online environment to include peer feedback. This paper will first argue why peer feedback is an essential element in any learning process and why particular so in an online environment. Accordingly this paper will consider the challenges and how to meet them. Finally, this paper will consider students' evaluations on peer feedback.

Key words: online environment, peer feedback, acquisition learning content, collaborative learning.

INTRODUCTION

It appears that when students learn, online or onsite, three elements are present: student-student interaction, student-teacher interaction and student-content interaction. Anderson (2003) explains that in the traditional classroom the primary method of any interaction was that between teacher and student. All three types of interaction support the learning process, and the mode emphasised may depend on the type of education such as hybrid, e-learning or f2f settings (Murray, Pérez, Geist, & Hedrick, 2013). The salient mode here is student-content interaction, for as Moore (2012) explains, without student-content interaction there is no education. It would seem fair to assume then that student-teacher interaction and student-student interaction are elements that assist student-content interaction. In an environment where the teacher is not always present student-student interaction would appear to be the primary element in assisting student-content interaction. Whilst new web tools are emerging with advancing technology, the one method that still requires students to critically consider their own perspective and that of others is through peer feedback.

FEEDBACK

In a learning environment where formative assessments play a dominant role, students not only interact with the content in an isolated environment, but are guided through instructions and corrections to become cognitively engaged in the learning content. In fact, Nicol and Macfarlane-Dick (2006) explain that feedback serves as a form of formative assessment that accelerates learning. In addition then to quizzes and other forms of self-assessment, feedback seems to play a salient role in learning processes as a form of formative assessment, one that is essential to students' learning (Driscoll, 2000).

In an online environment students run the risk of disconnecting from the learning content or the learning environment due to the imminent danger of learning in isolation. According to Ko and Rossen (2001) this risk is far higher than in traditional f2f courses. As such, feedback plays a salient role in online environments (Lynch, 2002; Paloff & Pratt, 2001). Due to the emphasis on feedback in an online environment, there are guidelines on providing constructive feedback, which should be prompt, consistent, and ongoing (Ertmer & Stepich, 2004). However, providing ongoing and timely feedback places huge demands on instructors' time and effort and vastly increases the workload. One way instructors have coped with these demands is by incorporating peer feedback as an instructional strategy.

PEER FEEDBACK

Whilst peer feedback may provide some obvious time-saving benefits for instructors, there are many advantages to peer feedback that make incorporating peer feedback as an instructional strategy highly interesting, even without considering the reduction on the instructor's workload.

When students provide feedback to their fellow students, they inevitably humanise the environment and build communities (Corgan, Hammer, Margolies & Crossley, 2004) since through the receiving of peer feedback students learn in their peer's learning and acquire different perspectives and understanding. When students share perspectives they centralise learning processes hence advancing their cognitive engagement with the learning content. Peer feedback then can be seen as a process that is essential to the acquisition of learning content. In short then, peer feedback can potentially reduce the instructors' workload whilst at the same time providing the particular feedback that is salient to students' learning, one that results in peer learning.

Peer learning may be seen as "valuing the exchanges of critical feedback among peers and modifying works according to peer feedback (Liu, Liu, Chiu and Yuan, 2001, p. 246). Liu et al explain that peer feedback can establish authentic learning environments in which students collaboratively construct knowledge. The importance of collaborative learning in authentic learning environments is not a new phenomenon. On the contrary, Vygotsky (1978) already explored the causal relationships between the individual's cognitive acquisition of learning content and social interaction. Piaget (1928) before him already explained that collaborative learning and constructive cognitive development are inseparable. With the challenges that online environments bring to education, it seems imperative that collaboration through, inter alia, peer feedback are understood and embraced.

Whilst there are other methods of online collaboration, there is one aspect of feedback that solely pertains to peer feedback, namely the learning process it ignites for both the receiver as well as the provider. Research shows that peer feedback is not only for the benefit of the receiver, but also for the provider (Ertmer, Richardson, Belland, Camin, Connolly, Coulthard, Lei & Mong, 2007; Popta, Kral, Camp, Martens, Simons, 2017). Popta et al (2017) explain that different learning benefits are had when providing online feedback, in particular since a student uses different cognitive processes when providing feedback. When students compare others' work to their own, the assimilation of new knowledge is triggered, referred to as reflective knowledge building.

USING PEER FEEDBACK

Some challenges to using peer feedback should be considered. Whilst it seems evident that peer feedback greatly benefits students' (online) learning, it should be noted that some guidelines are essential. Palloff and Pratt (1999) explain that "the ability to give meaningful feedback, which helps others think about the work they have produced, is not a naturally acquired skill" (p. 123). Students might feel some inhibitions about giving and receiving feedback, in particular negative feedback. At the same time steps should be undertaken to ensure reliable feedback.

The potential challenges to giving and receiving peer feedback can be overcome by ensuring that students have carried out the same assignment themselves for which feedback should be given to a peer (Nicol, 2012). Building on this students should do more than just give an opinion in their peer feedback: they should provide suggestions for improvement (Nicol, 2010) because through this activity they can express to their peer what they understand. Wooley (2008) explains that in providing peer feedback students must explain the given feedback, since this requires the provider to think constructively and to express ideas that add to the peer's text rather than abstract from it, and as such is a positive form of constructive feedback.

STUDENT-INSTRUCTOR FEEDBACK

It would be inconsistent and contradictory to the appraisal of implementing feedback, when the same is not requested by the researchers. The following three examples are real-life examples: feedback from students to instructors.

One example of peer review is from a graduate class in education and online course development. The students complete a six-week course that merges theory and function. Not only do students need to demonstrate their thorough understanding of theory, using an evaluative model, and applying standards, but also they need develop a short course using Blackboard's free Learning Management System (LMS) Coursesites. In one of the classes there were several very weak and several very strong students. The strong students appeared to have an easy time of brainstorming ideas, determining their course topics, developing their ideas, and working with the technology to bring the course to fruition. On the other hand, the weak students struggled endlessly from developing their ideas to creating their courses. The technology stopped them cold. They did not have the vision, patience, or curiosity to fully develop their courses as required. Then, the peer review process began. The professor was very nervous, as there was a huge gap between the weak and the strong students. Would the strong students provide negative and unfiltered responses to their weaker peers? Would the weak students make some gains based on the fact that the

weaker students would observe the stronger students nearly fully developed courses? The professor needed to trust the peer review process. Once the weak students could see the stronger students' courses, they gained instant clarity. They had a working model to view and review. The weaker students were able to see what could be and what needed to be done to satisfactorily complete their course development. The process of peer review did not disappoint. The weaker students – miraculously – were able to perform and brought their final project courses to a level that was more than acceptable.

Another example of peer review is from a multidisciplinary capstone course. Most of the papers the students have done until they enrol in this course are opinion papers with a bit of research included. This course, however, calls for a paper that is strictly based on research and uses APA format and APA style. In fact, the articles all need to be peer reviewed to substantially support the students' ideas, thoughts, and opinions. To make matters more complex, no matter what degree program students are completing, they need to complete multidisciplinary capstone course. Students need to select two specific disciplines from a list of ten, and their research topic has to involve these two disciplines. For instance, students might choose a topic such as "The History of the Criminal Justice System in the South." The topic fully integrates the two disciplines of history and criminal justice, which are two disciplines (of the ten) on the list. Some students have absolutely clarity in terms of the topics they choose, developing the outline, and beginning the writing process (APA format and style). Other students struggle with the topics, the disciplines, the approach, and APA. Week 6 of the eight-week course is the peer review week. Students need to post their papers in the discussion for review, as well as to review another classmate's work. This is another circumstance where the peer review process does not disappoint. In fact, in Week 4 in this course, the professor reviews the first draft of the paper and provides feedback. It is up to the students to make the required edits and to update the paper. Before the second draft (to be submitted in Week 6), the students review each other's work in the peer review process in discussion (Week 5). Not surprisingly, the peer review process most often mimics what it is the professor is stating. The students see the feedback from the professor and classmates echo it. The peer review process again does not disappoint. Students react to the feedback, do the necessary rewriting, and research to effectively support their ideas. Again, the peer review process does not disappoint.

Another example of peer review is from a graduate statistics class. Statistics is a challenging class to teach and equally challenging for students to understand. Students need to fully embrace the topic and practice, read articles, and review examples. Students do not often use statistics in everyday life as you would use simple math, so it is a topic students need to review frequently throughout their studies, especially in graduate work. In a conversation held at 19 February 2018 the professor, Dr Nagib Callaos, explained that in this case he fully believed in the benefit of peer review, however, that enthusiasm was not met by the students at the onset: "*Students in this peer review example were upset and did not think the group work and peer process was fair in the beginning. However, at the end the students really learned how to do statistics and were pleased with the results of the group work and peer review. Also, if this professor were to use this method in the future, he would handle the negative emotions in the beginning and let the students know that the process might not seem fair, but that in the end they would be very pleased, to be patient and work through the learning model and peer review*". The stakes were high in the process that was developed to put peer review to the test. The professor established groups in the class. Each group member needed to fully represent the group in that each group member could be called upon to explain how to complete a problem or to solve it. Each student would represent the group and the group would be given the same grade as the student. Alas, not all group members were full-versed in statistics. Imagine being in the group with three strong students and three weak students. What would you do? You would make sure that every student could solve every problem in the back of the book for the chapters of the week. That way, your grade was protected. That is exactly what the groups did. They taught each other how to successfully complete each problem. If one student could not solve one problem, that became the weakest link. Other team members would work with the student to make sure he or she could successfully solve the problem and represent the group well, thereby protecting the grades for all students. There was perhaps not much love of this professor in the beginning. However, the students learned and learned and learned how to do statistics. One would like to think that they are grateful to have participated in this peer review experiment, as they learned statistics – inside and out, backwards and forwards. What better way to learn a subject than to teach it?

CONCLUSION

Whilst peer feedback offers many promises in terms of time restraint and enhancing cognitive learning, it should be noted that peer feedback and peer learning can only come about in a positive, reliable and uninhibited manner

when students are given clear guidelines on how to carry out peer feedback. Additionally, it may be desirable to give teacher-student feedback in general on the peer feedback given, as this will ensure that the peer feedback guidelines are adhered to, and additionally adds to the instructor's (social) presence in the online environment.

REFERENCES

Anderson, T. (2003). Modes of interaction in distance education: Recent developments and research questions. In D. M. Moore (Ed.), Handbook of distance education (pp. 129-144). Mahwah, NJ: Erlbaum.

Corgan, R., Hammer, V., Margolies, M., & Crossley, C. (2004). Making your online course successful. *Business Education Forum*, *58*(3), 51–53

Driscoll, M.(2000). Psychology of Learning for Instruction (2nd ed.). Boston, MA: Allyn and Bacon.

Dunlap, J.C. (2005). Workload reduction in online courses: Getting some shuteye. Performance and Improvement, 44(5), 18-25.

Ertmer, P.A., 7 Stepich, D.A. (2004, July). Examining the relationship between higher-order learning and students' perceived sense of community in an online learning environment. Paper presented at the proceedings of the 10th Australian World Wide Web conference, Gold Coast, Australia.

Ertmer, P. A., Richardson, J. C., Belland, B., Camin, D., Connolly, P., Coulthard, G., … Mong, C. (2007). Using peer feedback to enhance the quality of student online postings: An exploratory study. *Journal of Computer Mediated Communication, 12*(2), 412–433.

Ko, S., & Rossen, S. (2001). *Teaching online: A practical guide*. Boston: Houghton Mifflin.

Liu, E. Z.-F., Lin, S. S., Chiu, C. H., & Yuan, S. M. (2001). Web-based peer review: The learner as both adapter and reviewer. *IEEE Transactions on Education*, *44*(3), 246–251.

Lynch, M. M. (2002). *The online educator: A guide to creating the virtual classroom*. New York: Routledge.

Moore, M. (1989). Three types of interaction. The American Journal of Distance Education, 3(2), 1-7

Murray, M., Pérez, J., Geist, D. and Hedrick, A. (2013). Student Interaction with Content in Online and Hybrid Courses: Leading Horses to the Proverbial Water. Informing Science: the International Journal of an Emerging Transdiscipline Volume 16.

Nicol, D., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, *31*(2), 199–218.

Nicol, D. (2010). From monologue to dialogue: Improving written feedback processes in mass higher education. *Assessment & Evaluation in Higher Education*, *35*(5), 501–517.

Nicol, D. (2012). Resituating feedback from the reactive to the proactive. In D. Boud & E. Molloy (Eds.), *Feedback in higher and professional education: Understanding it and doing it well* (pp. 34–49). London: Routledge.

Nicol, D. (2014). Guiding principles of peer review: Unlocking learners' evaluative skills. In C. Kreber, C. Anderson, N. Entwistle, & J. McArthur (Eds.), *Advances and innovations in university assessment and feedback* (pp. 195–258). Edinburgh: Edinburgh University Press.

Palloff, R. M., & Pratt, K. (2001). *Lessons from the cyberspace classroom: The realities of online teaching*. San Francisco: Jossey-Bass.

Piaget, J.(1928). *The Child's Conception of the World*. London: Routledge and Kegan Paul Ltd.

Popta van, E., Kral, M., Camp, G., Martens, R. L., & Simons, P. R. J. (2017). Exploring the value of peer feedback in online learning for the provider. *Educational Research Review*, *20*, 24-34. http://dx.doi.org/10.1016/j.edurev.2016.10.003.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wooley, R., Was, C., Schunn, C. D., & Dalton, D. (2008, July). *The effects of feedback elaboration on the giver of feedback*. Paper presented at the 30th Annual Meeting of the Cognitive Science Society, Washington, DC