

Medical students' reflections in online discussions—does teacher facilitation matter?

Mary Furnari

Higher Education Development Centre (HEDC)
College of Education
Assistant Research Fellow, Faculty of Medicine
University of Otago

In an online environment '*teacher presence*' provides the structure, design and facilitation for students to engage in higher-order thinking and reflection. Reflective thinking involves critical analysis and evaluation of an issue or practice in order to understand and make sense of new information and relate it to prior knowledge and experience. This paper, which is part of a larger study, examines the quality of students' reflections in online discussions when teacher facilitation is minimal or absent. Participants were 80 second year undergraduate medical students at a New Zealand university. Two online discussion assignments with different tasks were qualitatively analysed for levels of reflection. The findings suggest that students engaged in reflection despite lack of facilitation or minimal direction by teachers. Results indicate that online discussion can be an effective tool to encourage reflection in medical students irrespective of teacher facilitation.

Keywords: online learning, medical education, reflection, intercultural learning

Introduction

Different methods have been used to develop students' reflective ability, for example reflective journals and web-based tools including e-portfolios, online discussions, and class blogs (Curtis, 2006; Williams & Wessel, 2004). In particular, reflective journaling can increase students' awareness of their assumptions and broaden their viewpoints (Williams & Wessel, 2004). Web-based tools such class blogs or online discussions have the advantage of dynamic interaction that allows students to get feedback from peers and teachers thereby deepening reflection (Plack, Dunfee, Rindfleisch, & Driscoll, 2008).

The online learning literature stresses the importance of '*teacher presence*', which includes the design, facilitation and direction of cognitive and social processes in order to achieve meaningful and educationally sound learning outcomes (Garrison, 2003). However, monitoring and facilitating online discussion can be time consuming for busy clinician-teachers in medicine (Lie, Shapiro, Cohn, & Najm, 2010; Swan, 2005). This study provides a snapshot of an ongoing doctoral study involving medical students in New Zealand that examines levels of reflection in online discussion posts. This paper examines to what extent medical students are able to reflect in online discussion posts despite minimal or no teacher participation.

Characteristics of the online learning environment

The combination of the asynchronous and interactive nature of the online learning environment encourages students to engage in higher-order learning and reflection (Garrison, 2003). The asynchronous quality of online discussion allows students time for more careful reflection than is possible in fast-paced classrooms (Garrison, Anderson, & Archer, 2000). The time between reading posts and responding, allows students to reflect on and interpret what others have said before they construct their reply (Ziegahn, 2001). Furthermore, online discussion is interactive, which gives students the chance to collaborate and negotiate meaning in a context where multiple perspectives can be expressed as students search for understanding (Garrison, 2003; Swan, 2005).

To foster an optimal online learning community three components are important: cognitive presence, social presence and teacher presence (Garrison et al., 2000). *Cognitive presence* includes the learner's process of reflection and dialogue in order to achieve meaningful learning. *Social presence* is the ability of learners to present themselves as 'real people' and along with the teacher create a cohesive, supportive virtual group. *Teacher presence* involves: 1) planning the design and assessment of the learning activity, setting time parameters and use of the online medium; and 2) facilitation and direction to promote an effective group that can share meaning, identify areas of agreement and disagreement, and attempt to reach consensus and understanding. The facilitation role can also be performed by students. This paper focuses on examining the quality of students' reflections in online discussions where teachers provided minimal or no facilitation.

Design and analysis of the online discussions

Participants in this study comprised 80 second year medical students at a New Zealand university involved in a Culture and Health unit. Students were required to post at least one comment and one reply online following tutorials in the first and second week of the unit, but the posts were not assessed. The week 1 assignment asked students to take one of the theoretical concepts about culture presented in the tutorial and apply it to one of the clinical cases in the reading. The week 2 assignment asked students to reflect on a film, the tutorial discussions and the readings and explain what they had learned about culture and healthcare. A reflective rubric to guide reflection and a hand-out to explain the value of online discussions and provide suggestions on how to effectively engage in a threaded discussion online was posted on Moodle, the course management system. Teachers were briefed about the reason for the online discussions and given a hand-out that explained key messages to students, prompts to encourage reflection and ways to facilitate discussion. Teachers were free to participate in the online discussions as much or as little as they wished. In this sample teachers participated in week 1 discussions only.

The remainder of this paper considers the online discussion posts from eight tutorial groups (four each from weeks 1 and 2). There were a total of 127 student posts in the sample. Due to lack of familiarity with threaded discussions, most groups engaged in multiple short discussions (e.g. 2-3 posts) rather than one threaded discussion. Four teachers participated in nine discussions in week 1. There were no teacher posts in the week 2.

In order to evaluate the students' level of reflection, the unit of analysis was an entire post (i.e. one more or sentences/paragraphs) made by a student. Posts often began non-reflectively, with a description or response to an incident/issue and moved to higher levels such as *reflection* or *critical reflection*. Individual posts were evaluated as a whole and given a rating based on the highest level of reflection achieved in the post. This study investigates the quality of students' reflection in discussion posts where teachers were absent or minimally present (i.e. 1-2 posts). (See Table 1)

Reflection Framework

A three category scheme was developed to evaluate the students' levels of reflection in the online posts (adapted from Hatton & Smith, 1995; Kember, McKay, Sinclair, & Wong, 2008; Wallman et al., 2008). The three levels from highest to lowest are described below:

- **Critical reflection:** Critically explores and critiques assumptions, values, and beliefs and considers the consequences of actions. Demonstrates awareness that actions and events are located in and explained by references to multiple perspectives
- **Reflection:** Course content/theory is applied to cross-cultural clinical case study and related to future practice and/or personal experience. Demonstrates personal insights that go beyond book theory
- **Understanding (non-reflective):** Cross-cultural clinical case is described in light of course content or theory, but without being related to personal experiences or real-life applications

Types of reflection and teacher posts

A preliminary evaluation of the discussion posts indicated that 34% (n=44) indicated *understanding*, 60% (n=76) posts indicated *reflection* and 6% (n=7) indicated *critical reflection*. Posts for week 1 comprised 48% (n=59) and week 2 52% (n=66). The approximate percentage of posts that indicated *understanding*, *reflection* and *critical reflection* respectively were similar for both weeks.

The following is an example of *reflection* that occurred during the week 1 online discussions.

Example: *Reflection*

As we study 'informed consent' we should remember that our beliefs and expectations are relatively new, centered on our Western culture and may not exist elsewhere in the world or with older generations... Personally, I would like to be informed about my medical situation, but I can understand the merits of the paternalistic approach, even though on first glance it looks like plain denial. Trust and power is vested in the medical professional and patient's family, which must be mentally relieving and is a valid response in an uncertain and threatening situation... I think it may be useful to let the patient know that... he is able to find (out about his condition) anytime if he chooses. (Group 2: Patrick)

This post is deemed ‘reflection’ because the student considers the different ways informed consent may be viewed by other cultures or different generations compared with his and his classmates’ personal views. He also recognises the benefit of nondisclosure to the patient despite the student’s personal preference for full disclosure, and discusses an alternative way to handle this in future medical practice. This student’s post was made prior to any posts made by the teacher.

In Group 2 (example above) the teacher made two posts during the five-day period in which eight discussions (2-3 posts each) took place. The teacher’s first and second post occurred following Patrick’s post (example above). In the seven remaining discussions for this group in which there were no teacher posts six indicated examples of *reflection* and one indicated *understanding*.

Table 1: Summary of week 1 posts and levels of reflection

	Total # discussions by group	# Discussions with tutor posts	Levels of reflection	# Discussions with no teacher posts	Levels of reflection
Group 1	6	2	2=R	4	2=R 2=CR
Group 2	8	1	1=R	7	6=R 1=U
Group 3	5	4	2=R 2=U	1	1=R
Group 4	4	2	2=R	2	2=R
Totals	23	9	7=R; 2=U	14	2=CR; 11=R; 1=U

This data indicates that 60% (n=14) of week 1 online discussions had no teacher posts and 93% (n=13) of these discussions indicated *reflection*. Interestingly, the only examples of *critical reflection* in week 1 occurred in discussions with no teacher posts.

The following is an example of critical reflection from week 2 online discussions.

Example: *Critical reflection*

I’m increasingly...convinced...that culture isn’t so much something you belong to, but instead is the assumptions you make in your day-to-day activities and your way of thinking... However, when encountering another culture, these assumptions break down. The solution... seems to be both an awareness of our own assumptions and a reductionist approach. When we know we’re engaging with another culture, it seems dangerous to let anything pass unquestioned, especially if we believe it is in the patient’s best interests. Had the doctor inquired further into Mr. Kochi’s ...refusal of chemotherapy, he may have uncovered that the refusal was merely a limitation (that is, he wouldn’t accept the pump). Instead the doctor’s own assumption interfered, the assumption that the refusal was part of Mr. Kochi’s faith (partially correct, but nonetheless damaging) and that one should not inquire further into such matters. I’m not suggesting that the doctor should try to change the patient’s belief, merely make sure that the patient’s objection is in fact relevant to the situation and work to formulate alternatives. (Week 2: Raymond)

This post is deemed ‘critical reflection’ because the student is rethinking his beliefs about culture, and he recognises that actions and events arise from the different perspectives of the patient and doctor. The student also considers the consequences of the doctor’s actions that were based on faulty assumptions and discusses the implications for future practice.

During week 2 discussions there were no teacher posts. In total, there were 66 student posts; 35% (n=23) indicated *understanding*, 58% (n=38) indicated *reflection* and 7% (n=5) indicated *critical reflection*. The students were able to reach these levels of reflection and critical reflection with no teacher facilitation.

Discussion

The majority of students in this study were able to engage in reflection about the impact of culture in healthcare settings when there was no teacher facilitation or only one or two teacher comments. There may be several reasons for this. It appears that the design of the learning activity encouraged students’ online reflection. The activity was designed to link concepts of culture to the clinical context. Medical students are more likely to engage in a reflective activity if it is meaningful (Sobral, 2001) and relates to the clinical context (Wittich et al., 2013). By embedding the concepts of culture into real-world clinical cases, the students were able to see the

relevance of cultural differences between doctor and patient to the patient health outcomes. Furthermore, students were able to apply what they had learned from the case to their own future practice. The clinical cases also encouraged students to examine the role of assumptions in misunderstandings and miscommunication between doctor and patient. They also helped students to recognise that their own assumptions may differ from their patients as in the case of Patrick's observation about different views on informed consent.

The structure of the activity appears to have provided sufficient guidance for students to be able to reflect in the absence of, or despite, minimal facilitation by teachers. Firstly, the reflective rubric clarified the characteristics of different levels of reflection. Secondly, the assignments prompted reflection by asking students to share both thoughts and feelings, consider patient outcomes, draw upon personal experience in their analysis, and consider the perspectives of doctor, patient and family. By providing examples of reflective behaviours such as attending to feelings, considering the consequences of people's actions (i.e. patient outcomes), drawing upon personal experience and considering different perspectives, students were guided to reflect in the absence of facilitation.

Two factors may have limited teacher's facilitation online. Firstly, the online discussions involved piloting a new technology with which many of the teachers were unfamiliar. This may have limited teachers' participation. Secondly, students were not given a deadline for posting comments and many waited until the day before the next tutorial to post. This may have limited teachers' opportunities to monitor and facilitate the discussions.

Teacher presence, which includes the design and structure of the activity as well as teacher facilitation, is considered crucial for effective online learning. In this study the lack of teacher facilitation did not detract from reflection demonstrated by students. In the absence of teacher facilitation emphasis should focus on design: choose topics that are clinically relevant and meaningful, provide reflective rubrics and ensure questions draw upon reflective behaviours. Properly designed online discussions can be an effective tool to engage students in meaningful discussions that are able to foster reflection in students despite minimal or no facilitation by teachers.

Acknowledgements

Special thanks to my supervisors Dr Clinton Golding, Higher Education Development Centre and Dr Vivienne Anderson, College of Education, as well as colleagues in HEDC for their advice and encouragement while preparing this paper.

References

- Billings, D. (2006). Journaling: a strategy for developing reflective practitioners. *Journal of Continuing Education in Nursing*, 37(3), 104. <https://doi.org/10.3928/00220124-20060301-02>
- Curtis, J. N. (2006). Using Online Discussion Forums to Promote Critical Reflection among Pre and In-Service HIV/AIDS Educators and Service Providers. *International Electronic Journal of Health Education*, 9, 166–179.
- Garrison, D. R. (2003). Cognitive presence for effective asynchronous online learning: The role of reflective inquiry, self-direction and metacognition. *Elements of Quality Online Education: Practice and Direction*, 4, 47–58.
- Garrison, R. R., Anderson, T., & Archer, W. (2000). Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. *The Internet and Higher Education*, 2(2-3), 87–105. doi:10.1016/S1096-7516(00)00016-6
- Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education*, 11(1), 33–49. doi:10.1016/0742-051X(94)00012-U
- Kember, D., McKay, J., Sinclair, K., & Wong, F. K. Y. (2008). A four-category scheme for coding and assessing the level of reflection in written work. *Assessment & Evaluation in Higher Education*, 33(4), 369–379. doi:10.1080/02602930701293355
- Levine, J. S. (2007). The Online Discussion Board. *New Directions for Adult and Continuing Education*, 2007(113), 67–74. doi:10.1002/ace.248
- Lie, D., Shapiro, J., Cohn, F., & Najm, W. (2010). Reflective practice enriches clerkship students' cross-cultural experiences. *Journal of General Internal Medicine*, 25 Suppl 2(5), S119–S125. doi:10.1007/s11606-009-1205-4
- Plack, M. M., & Greenberg, L. (2005). The reflective practitioner: reaching for excellence in practice. *Pediatrics*, 116(6), 1546–52. <https://doi.org/10.1542/peds.2005-0209>
- Plack, M. M., Dunfee, H., Rindfleisch, A., & Driscoll, M. (2008). Virtual action learning sets: a model for facilitating reflection in the clinical setting. *Journal of Physical Therapy Education*, 22(3), 33–42. <https://doi.org/10.1097/00001416-200810000-00005>

- Sobral, D. T. (2001). Medical students' reflection in learning in relation to approaches to study and academic achievement. *Medical Teacher*, 23(5), 508–513. <https://doi.org/10.3109/01421590109177952>
- Swan, K. (2005). A constructivist model for thinking about learning online. *Elements of Quality Online Education: Engaging Communities*, 6, 13–31.
- Wallman, A., Lindblad, A. K., Hall, S., Lundmark, A., Ring, L., Uppsala universitet, ... Farmaceutiska fakulteten. (2008). A categorization scheme for assessing pharmacy students' levels of reflection during internships. *American Journal of Pharmaceutical Education*, 72(1), 05. doi:10.5688/aj720105
- Williams, R. M., & Wessel, J. (2004). Reflective Journal Writing to Obtain Student Feedback About their Learning During the Study of Chronic Musculoskeletal Conditions. *Journal of Allied Health*, 33(1), 17–23.
- Wittich, C. M., Szostek, J. H., Reed, D. A., Kiefer, J. L., Mueller, P. S., Mandrekar, J. N., & Beckman, T. J. (2013). Measuring Faculty Reflection on Medical Grand Rounds at Mayo Clinic: Associations With Teaching Experience, Clinical Exposure, and Presenter Effectiveness. *Mayo Clinic Proceedings*, 88(3), 277–84. <https://doi.org/10.1016/j.mayocp.2012.11.014>
- Ziegahn, L. (2001). “Talk” about Culture Online: The Potential for Transformation. *Distance Education*, 22(1), 144–50. doi:10.1080/0158791010220109

Contact author: Mary Furnari, mary.furnari@otago.ac.nz

Please cite as: Furnari, M. (2014). Medical students' reflections in online discussions – does teacher facilitation matter? In B. Hegarty, J. McDonald, & S.-K. Loke (Eds.), *Rhetoric and Reality: Critical perspectives on educational technology. Proceedings ascilite Dunedin 2014* (pp. 574-578). <https://doi.org/10.14742/apubs.2014.1287>

Note: All published papers are refereed, having undergone a double-blind peer-review process.



The author(s) assign a Creative Commons by attribution 3.0 licence enabling others to distribute, remix, tweak, and build upon their work, even commercially, as long as credit is given to the author(s) for the original creation.