

Peer Analysis as a Cooperative Learning Instructional Strategy

Dr. Lloyd C. Bell

Department of Agricultural Leadership, Education & Communication
237 Food Industry Complex
University of Nebraska – Lincoln
Lincoln, NE 68583-0947

402-472-8739

lbell1@unl.edu

Peer Analysis as a Cooperative Learning Instructional Strategy

Introduction

The assessment process should begin in harmony with selection of content to be taught and development of an instructional plan for presentation (Fuentealba, 2011). Within the plan, opportunities for evidence of learning can be embedded as response processes. Response processes can serve to inform both instructor and student to the level of learning transfer occurring prior to a summative assessment (Almond, Steinburg, & Mislavy, 2001). The purpose for integrating peer analysis into the assessment plan of an undergraduate program planning course was to extend the transfer of learning beyond just student/instructor engagement to include a student/peer engagement. As a part of the response process, providing opportunity to analyze another's work or spending time pondering another's view on their work provides for the extension of learning and refinement of skill development. (Sadler & Goodi, 2006).

How it Works /Methodology/Program Phases/Steps

Formal cooperative learning groups were utilized as the method of choice to facilitate peer engagement. Cooperative learning supports group processing through reinforcement of positive interdependence, individual accountability, promotive interaction, and development of professional communication skills (Johnson, Johnson & Smith 1991). These elements serve to reinforce a 21st century teaching skill of greater collaboration among teachers (Rotherham & Willingham, 2009).

Peer analysis was integrated into the course through three intermittent content quizzes as well as two major course assignments including a statement of educational philosophy and a needs assessment instrument. Student groups were purposefully reassigned for each analysis to promote diversity of interaction and to build a sense of professional community.

For content quizzes, students first, individually, completed a mixed objective-subjective quiz. After all individual quizzes were complete, learning groups were provided the same quiz to be completed. The intent of this non-threatening peer engagement and exchange process was to provide immediacy of correct response, promote individual accountability through professional communication skills, and enhance a mastery oriented pattern of learning (Dweck, 2000). Students received both individual and group quiz grades.

The major assignment reviews incorporated a formative process initiated by students providing a draft assignment copy to other group members approximately 3-4 days in advance of their actual peer review session. All group members were provided a matrix to guide review of other member's work. On the assigned day of the in-class review, group members explained the rationale of their assignment content and format, and engaged in a question/answer dialogue regarding their work. Upon submission of the final major assignment copy to the course instructor, each student provided a separate synopsis recounting what was learned from the

review of others work, helpful suggestions received for their work from others, and how those suggestions were incorporated into their final assignment.

Results to Date/Implications

At semester conclusion of the program planning course, the following evaluative request was made of the 25 course members: “The cooperative learning method of peer review was used several times during this semester. Please share your perception of the learning advantages and limitations provided by this method.”

From 21 usable responses, two majority advantages were identified. First, in regard to the quiz procedure, 52 % of students reported the immediacy of learning (teachable moment) provided through peer discussion and consensus extended and clarified their learning. This student quote best represents the responses, “I think too often we take quizzes or tests that we just hand in and forget about with no further learning.” The second advantage identified (67%) a gain of greater breadth and interpretation of how to address major assignments. A direct response providing further context was, “I found myself reviewing others’ assignments and thinking that I really like the way they have theirs laid out which led me to want to change mine or like the way I had mine set up less and less.”

Within the process of group content quizzes, in some situations, disagreement arose over attaining a consensus answer and maintaining a line of professional communication. This suggests need for a defined process to support a student’s position (i.e. instructor intervention and/or use of course notes). Within the process of major assignment peer review, the perennial cooperative learning issue of individual accountability (Jacobs, McCafferty & Iddings, 2006) surfaced in the form of some students not being prepared and able to provide useful feedback.

Future Plans/Advice to Others

Plans for continued use will focus on enhancing the validity and reliability of the process through informing and involving students to a greater extent. That process will include (a) discuss the desired purpose for conducting peer analysis and it’s relation to professional development, (b) enforce timely assignment submission deadlines to reinforce individual accountability to the peer review process and learning outcomes (Starting Point, 2017), (c) enhance directions, guidelines and/or rubric with more clearly defined tasks for the student reviewer to encourage deeper review beyond just proof reading, (d) model the peer analysis process prior to use e.g., select an assignment example, form groups, distribute rubric, conduct peer review, and complete a synopsis submission, (e) provide instructor supervision, guidance and intervention procedure to moderate student disagreement where necessary, and (f) discuss the formation purpose and procedure for cooperative learning groups in order to achieve greater trust and address concerns of compromising individuality.

Costs/Resources Needed

Time is the major opportunity cost of peer analysis. If peer analysis is to be efficacious, students must be adequately prepared. That in addition to the actual in-class time of review required 3-4 class periods.

References

- Almond, R., Steinburg, L., & Mislevy, R.J. (2001). A sample assessment using the four process framework. Center for Study of Evaluation Technical Report 543. National Center for Research on Evaluation, University of California-Los Angeles. Retrieved from <http://files.eric.ed.gov/fulltext/ED456154.pdf>
- Cornell University Center for Teaching Excellence. Peer assessment. Retrieved from <https://teaching.cornell.edu/teaching-resources/assessment-evaluation/peer-assessment>
- Dweck, C.S. (2000). *Self-theories: Their role in motivation, personality and development*. Psychology Press, Taylor & Francis Group. Philadelphia, PA
- Fuentealba C. (2011). The role of assessment in the student learning process. *J Vet Med Educ*. 2011 Summer; 38(2):157-62. doi: 10.3138/jvme.38.2.157. PMID: 22023924
- Jacobs, G. M., McCafferty, S. G., & Iddings, C. (2006). Issues in implementing cooperative learning. In S. G. McCafferty, G. M. Jacobs, & Iddings, C. (Eds.), *Cooperative learning and second language teaching* (pp. 30-47). New York: Cambridge University Press.
- Johnson, D.W., Johnson, R.T. & Smith, K.A. (1991), *Active learning: Cooperation in the college classroom*. Interaction Book Company, Edina, MN.
- Rotherham, A.J. & Willingham, D. (2009). 21st century skills: The challenges ahead. *Educational Leadership*, 67(1), 16-21. Retrieved from <https://eric.ed.gov/?id=EJ855079>
- Sadler, P.M. & Good, E. (2006). The impact of self- and peer grading on student learning. *EDUCATIONAL ASSESSMENT*, 11(1), 1-31, Lawrence Erlbaum Associates, Inc. Retrieved from <https://www.cfa.harvard.edu/sed/staff/Sadler/articles/Sadler%20and%20Good%20EA.pdf>
- Starting Point - Teaching Entry Level Geoscience. Assessment of cooperative learning. Carleton College. Retrieved from <http://serc.carleton.edu/introgeo/cooperative/assess.html>