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Using A Field Journal To Enhance Conceptual Understanding

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WRITING COLLABORATIVE INQUIRY FELLOWSHIPS
Closing Write-up 2007-08

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Title: *Using A Field Journal To Enhance Conceptual Understanding*

Research Question:

Is individual experience a significant factor in deepening conceptual understanding?

Method:

i) A Field Journal Assignment was given to two classes (1 grad and 1 undergrad) each of three terms over the course of the academic year. Students in each course were provided with a seminal reading which articulated the merits of deepening conceptual understanding by means of analyzing one's beliefs about a particular concept and one's reasons for holding those beliefs. (Wilson, J. 1998, "Seriousness and the Foundations of Education", *Educational Theory Vol 48: #2*)

ii) The assignment focused on the analysis of a particular concept using selected course readings, an article (chosen by the student) from a peer reviewed journal and a discussion of the application of the concept in the students' practica experience - (20 hour per term classroom observation and assistance). A template outlining the requirements for each journal entry was provided to students at the beginning of the course. Each journal entry was peer-reviewed by a student in class, evaluated by a graduate assistant and graded by the course instructor according to the template and an evaluation rubric provided to the participants.

ii) Students were asked to complete a survey at the end of each course indicating their awareness of the effectiveness of the assignment for; i) enhancing their conceptual understanding; ii) the significance of their personal experience to the assignment, and their suggestions for improving the assignment.

iii) The researchers examined the journal entries and surveys at the end of each term and identified:

- similarities and differences among the responses on a class by class basis.
- significant differences between graduate and undergraduate responses
- patterns of comments that indicated an increase in conceptual understanding due to the assignment parameters

Key Findings:

i) A high majority of students (70-80%) reported that the journals were useful in conceptualizing concepts and relating the concepts to their personal experience.

ii) The majority of students referred to the seminal article in their discussions of particular concepts.

iii) Those students (primarily graduate students) who did not find the journals useful in relating concepts to their personal experience attributed this to the fact that they did not have sufficient field experience. This finding is supported by the difference in programming for graduate and undergraduate courses. The grad course is taken in the first term of the program whereas the undergrad course is usually taken in the third or final term of the program.

iv) The undergraduate journal entries generally referred to more "concrete" (observable) features of a concept and a particular use in a classroom situation whereas the graduate entries generally referred to more "abstract" features of the concept and its global implications.

v) The undergraduate students treated each concept as a separate entity in each entry, whereas graduate students tended to cross-reference each concept with concepts they discussed in other entries.

vi) Students were offered the opportunity to choose a creative way to present their journals. Although a few students took advantage of the opportunity and prepared some visually interesting and attractive journals, the allowance for a creative means of presenting the journal had little to no effect on the quality of the analysis and the consequent deepened understanding.

vii) Journals that did not follow the prescribed template for the assignment for the project had fewer in-depth and insightful discussions about the concepts.

Implications for Further Study:

This study raised many further questions about “conceptual understanding”. Some may be useful for further research. For example;

i) The frequency of references by respondents to the seminal article on the merits of conceptual understanding suggest that it may be worthwhile to examine *whether there is a correlation between an increase in conceptual understanding and the “value given” to such endeavors?*

ii) A visual framework was provided by the instructor in an attempt to distinguish “understanding” from “knowledge”. Although students seemed to grasp the difference, the attempt to make a visual distinction raises the question of *what conceptual understanding might “look like”?*

iii) During the latter part of the project, the survey respondents were asked to use the visual framework to indicate an increase in their conceptual understanding over the term. The request caused significant confusion for some students. The confusion suggests that it might be worth examining *whether there is a correlation between an increase in conceptual understanding and the participant’s awareness of the increase?*

iv) Students in both courses looked at the central concepts in the context of a variety of controversial issues related to teaching and learning. This raises the deeper question of *whether there is a correlation between conceptual understanding and understanding controversial issues?*

Implications for Teaching and Learning:

The depth of understanding in any discipline seems to depend to some extent on the participants’ familiarity with some central or “pivotal” concepts. The results of this exploratory project strongly suggest that conceptual understanding of such central concepts can be enhanced by:

i) Structured assignments (template and rubric): Several students noted that although the template seemed at first to “restrict” their writing, they came to appreciate its value as a necessary framework for deepening their conceptual understanding.

ii) Common readings: The common elements for each assignment (the seminal article, the concept selected for inquiry and the selected course readings), provided a basis for deepening conceptual understanding through further discussion. Students noted that even with common readings, there was significant difference in the selection of aspects of the concept that were of interest for discussion. The divergent elements (the peer-reviewed journal article and individual experience) provided additional differing perspectives on the common ground.

iii) Opportunities for written reflection, dialogue/feedback and meta reflection: The written requirement of the assignment provided an opportunity for students to clarify their thinking about a concept **before** engaging in a

discussion with others about the concept. The dialogue then became more meaningful as it provided the opportunity to “fine tune” their perspective (add ideas, revise and clarify further). This led many students to engage in what they called a “meta-reflective” opportunity – to engage in an analysis of their own previous reflections. These were often added as informal “field notes” to the original journal entries and included further questions about the concept.

iv) Peer review: This was an opportunity for students to use the rubric provided by the instructor for an informal evaluation of the work of their peers. An examination of the work of others in respect to the criteria seemed to “transfer” to closer attention to criteria paid by students in their own entries.

v) Personal Experience: While this was expected by the researchers (and the participants) to be a significant factor in enhancing conceptual understanding, the results of this study leave the assumption open to further inquiry. As noted in the Key Findings section, those students with the most practica experience used it to discuss concrete and specific cases of the concept’s “application” in practice. Those students without previous practica experience, seemed to adapt their inquiry by using a different approach – discussing the concept in a more abstract or global way by “connecting” their understanding to other concepts discussed in the course. While “applications” and “connections” may both deepen conceptual understanding, it is not clear whether they produce the same level of understanding.