

Chapter 1.14

What Do They Learn?

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INTRODUCTION

Significant learning is marked by transformation in ways of thinking and in the making of meaning. As Winn (1997) put it: “Information is not knowledge and knowledge is not wisdom.” He goes on to point out that “the acquisition of knowledge from information requires effort and involves perceptual and cognitive processes that decode symbols, deploy literacy skills to interpret them, and apply inferencing [*sic*] abilities to connect them to existing knowledge.” I have argued elsewhere that the instructor must make cognitive development an overall course goal (Payne, 2004). The possibility that there can be developmental change must be an underlying assumption of effective course design. But even given a strong commitment to our students’ cognitive growth, how can we know that the most careful course design and the most thoughtful discussion facilitation are having a positive impact on their thinking abilities? We need some evidence about the impact of our strategies to guide us in improving them. In this chapter, I suggest that the transcripts generated by asynchronous discussion can be more than the objects of quantitative analysis, and that

our practice as teachers in any discipline can also benefit by attention to these highly accessible records of our students’ work.

Dewey and his heirs, the educational constructivists, set forth certain conditions for significant learning: that students are active, interactive, and reflective, within any particular learning environment (Payne, 2004). In this chapter, one emphasis is on interaction, the social aspect of the construction of knowledge, as it may occur and be fostered in a specific context, asynchronous discussion. The other is on the identification of indicators of development in transcripts of those discussions. In this case, the indicators selected are for interactivity and for inference, one of those higher-order thinking skills considered to be an aspect of reflective thinking.

Most courses in any format require students to submit written work, and these, of course, are subject to ongoing assessment. Online discussions yield additional records or transcripts not available in the traditional classroom setting which can be useful in evaluating the effectiveness of course design. As a demonstration of how these records can assist us in improving our teaching practices, I review some models for the content

analysis of online transcripts and select criteria for identification of growth in critical thinking skills. Indicators for the selected skills are identified in the transcripts generated in the early and later stage discussions in an undergraduate ethics course. The course structure is described and the results of the trial analysis are presented, with their implications for design and for effective discussion facilitation.

THE DEVELOPMENTAL PERSPECTIVE

Adopting a developmental perspective is key to assessing the effectiveness of course design. Unless improvement in students' knowledge, skills, and understanding is the objective of any course, it has no value as an educational experience. Here we focus on improvement in critical thinking or higher-order thinking abilities, a desirable outcome in any disciplinary context.

A conventional research design that seeks evidence for development would include the establishment of a baseline measure of these abilities prior to the start of the course to be evaluated. However, given the logistics of populating a college course, the opportunity to identify such a baseline is usually not available to the instructor planning a course. The next best strategy might be to evaluate target abilities (e.g., skills in manipulating information, critical analysis) just after the start of the course, in this case, using the transcript of online discussions from the first weeks. Without the developmental perspective—that is, the focus on positive change—the value of any analysis of student performance is questionable. Thus, a comparison of the performance of students participating in threaded discussions with those who do not, undifferentiated as to whether the participation took place early in a course or later (as in examples reported by Weasenforth, Biesenbach-Lucas, & Meloni, 2002), serves at

best to provide support for the weak conclusion that “higher-order thinking can and does occur in online discussions” (Meyer, 2003). This may be a counter to those who still doubt that written conversation can have the same qualities as spoken conversation, but it does little to advance the project of using the online environment to help student development.

The developmental perspective implies a belief in the possibility and the probability that students will exhibit positive change in an appropriate environment; with this commitment, the task of the teacher is clearly to design and realize that environment. Without this commitment, the analysis and assessment of transcripts—or of any other aspect or record of a course—is essentially sterile, because it cannot have any purpose beyond the analytical exercise itself. Weasenforth et al.'s (2002) exclusion of the constructivist principle of “developmental influences on learning” from the framework of his study “because it is not particularly relevant for adult students” implies in part that we cannot expect these students to benefit from particular course design features.

INTERACTIVITY OR INTERACTION?

Terminology can lead us astray in our search for recognizable signs that course design is encouraging desired changes. *Interactivity*, for instance, frequently describes certain features of computer software, as in “self-paced” learning systems; they require individual learners to interact with computer applications or programs, rather than with peers or mentors. “Interactivity” and “interaction” are sometimes used interchangeably (e.g., the Web site of the Stanford University Interactivity Lab at <http://interactivity.stanford.edu/>), but in this context both interaction and interactivity will be used to denote a social function, conversation between human beings.

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