Using Technology to Improve the Quality of Classroom Instruction

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Abstract

This short paper is a case study describing the introduction of a computer-mediated dialogue process in support of classroom instruction in two graduate courses in the Management Department at the University of Canterbury. The R9 dialogue process was introduced using the WebCT platform. Course quality, both as perceived by the instructor and as indicated by student course and teaching evaluations, increased in both courses. Results are discussed and changes based on this experience are noted.

1. Introduction

In 2001, the R9 process [1] using WebCT was introduced in two face-to-face (FTF) graduate courses in the management department at the University of Canterbury. The objective was to improve quality by increasing the extent of critical thinking and reflection by students in these classes, and to enhance the perceived quality of the classes, as measured by student evaluations. The evaluations for both classes showed significant improvement over previous years.

2. The Courses

Both FTF courses were human resource management (HRM) courses. One was an MBA HRM course and the other was a BCom (honours) Strategic HRM course. In previous years, both courses were taught using a combination of lecture and discussion. The composition of each class varied, both in number and in experience. The MBA class was the largest (over 30 students), and the students generally had between 5 and 10 years of managerial experience. The honours class was smaller, with 16 students. This group had all completed undergraduate work in various disciplines, but as a group generally had little or no significant work experience.

Given the different levels of the students in the two courses, and the different purpose of the courses, course content was focused at different levels. For example, the MBA class was very application-focused, while the strategic HRM honours course was theory-based to a much greater degree. In both courses, previous evaluations had been adequate but not at the level desired.

3. Critical Thinking and Reflection

The R9 process was first developed in response to concerns that first arose during my experience teaching on-line in an asynchronous format. My primary concern was that students' participatory responses tended to be quite superficial, indicating a lack of critical thinking and reflection. I experienced the same concerns with my graduate FTF classes at Canterbury.

In looking at perspectives on critical thinking one can start with the limited perspective of a highly focused problem-solving approach (i.e. a quality program manual). Beyond that would lie the broader -- but still skill-based -- approach that is more about the "how and what" of critical thinking. This is more in keeping with the informal logic movement (ILM) [2,3]. One can then broaden the objectives of critical thinking with a more "socially conscious" perspective. To use Alvesson's and Willmott's [4] term, a "softer" approach (p. 432) that shows some concern for higher-order human needs. Finally, we have those perspectives that suggest the goal of critical thinking should be social emancipation. This latter position is more in keeping with the ideas of critical pedagogy and critical practice [5], and moves toward critical theory [6] and critical social science [7].

R9 is positioned somewhat in the middle of these perspectives -- going beyond the ILM by stressing critical thinking in the context of domain-based learning (in this case HRM), but not attempting to move to the socially conscious perspective or the critical theory and social science areas.

At the same time, we want to emphasise reflection and see students progressing toward becoming the reflective practitioners envisioned by Schon [8], who think and rethink some of their positions and assumptions, and practice "reflection-in-action" (p. 50).

4. The R9 Process Used On-Line

R9 as originally developed for on-line work basically involves an iterative process of reading, reflecting, and responding to material related to the learning objectives three separate times during a learning module. The first iteration requires small groups of students (normally not more than 4 or 5) to respond individually to one of the module's questions. It is critical that these questions require thought, not just repetition of assigned material. The second iteration requires students to review and critique individual responses of other students (who were assigned other questions). The final iteration requires the
small groups who had each question to reflect upon their initial responses and the critiques they received from others, and as a group, developing a "definitive response" (DR). In on-line classes, all this work is done on the platform being used to support the class, with the DR being the last posting for the learning module. The process activities are shown below.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>R1</td>
<td>Read the assignment for basic understanding</td>
</tr>
<tr>
<td>R2</td>
<td>Reflect on the contents</td>
</tr>
<tr>
<td>R3</td>
<td>Respond to the question (post)</td>
</tr>
<tr>
<td>R4</td>
<td>Read the responses of others as assigned</td>
</tr>
<tr>
<td>R5</td>
<td>Reflect on those responses</td>
</tr>
<tr>
<td>R6</td>
<td>Respond with critiques that will expand others' thinking on their questions (post)</td>
</tr>
<tr>
<td>R7</td>
<td>Receive the critiques of others relating to one's own initial response</td>
</tr>
<tr>
<td>R8</td>
<td>Reflect on the responses of others who had the same question and on the critiques that were received by all who had that question</td>
</tr>
<tr>
<td>R9</td>
<td>Respond by posting the DR to the question, developed in conjunction with others who had the question.</td>
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Table 1. The Basic R9 Process Activities

5. WebCT and R9 in Classroom Instruction

WebCT is the platform adopted by the University of Canterbury for computer support of classroom instruction. It has the primary component needed for using the R9 process, which is a threaded bulletin board-type posting feature. It also has many other features, such as email, chat rooms, and provision for other course resources.

In the two classes mentioned, initial questions were posted on WebCT immediately following each class. Each was assigned to a specific group of students. During the week between class meetings, the students posted individual responses to the questions they were assigned, and other students posted critiques of the responses of those students. Each group of students assigned a particular question then presented their DR in class (rather than posting), where it served as a basis for discussion. The instructor at this time ensured that all desired learning points had been covered. Using this process significantly increased class involvement, since each week, all students had to be involved in the process. As one MBA student put it, "There's no place to hide".

6. Results

Using the R9 process ensured broad participation and the quality of the dialogue in terms of critical thinking and reflection by students was significantly greater than in previous classes. In addition, student evaluations of the two courses improved significantly over the previous year – in the honours class, on the order of 20%. Since there were no control groups, we cannot say with certainty that all the improvement in student evaluations was due to the addition of the computer-mediated R9 process. However, from our experience with these two (and subsequent) courses, we feel there is good reason to believe this approach can enhance the quality of classroom instruction. Other management instructors at Canterbury have adopted R9 and are enthusiastic about their results.

The method seemed to be more effective with the honours class of 16 students than with the much larger MBA class so, as one would expect, class size may be an effectiveness factor. In response to a statement related to the effectiveness of the method in helping them learn, the honours students indicated a degree of agreement of 4.6 out of 5.0. In contrast, there were a number of comments from MBA students to the effect that they liked the methodology but would like to have heard more from the instructor. In response to this concern, the MBA format was modified so that only half the groups presented in class each week in 2002, which allowed more time for both discussion and instructor comments.

References