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ABSTRACT
        This paper discusses the learning issues involved
when setting computer literacy objectives for graduate students in
education. Stated and evaluated here are simple computer use
assignments representing an approach to literacy which is
teacher-centered, minimally integrated with subject matter content,
and having low cognitive-level task demands. The three assignments,
made at the beginning of a graduate education course involved: (1)
using e-mail to send/receive messages to each other about the course;
(2) consulting the professor's Website for course materials and
information; and (3) accessing the Internet for information. Data
collected from a brief anonymous questionnaire given at the end of
the course provided information on the perceived value of these
assigned activities. Spontaneous classroom comments and questions
throughout the course also yielded much information about student
experience of these teacher-imposed literacy objectives. Initially,
students were not pleased with the computer use requirement. In
addition, the teacher became involved in the students' individual
projects much more than planned. The percentage of students that felt
the activities should be retained was much higher than those who felt
they should not be retained. Students liked the Website more than the
e-mail option. The peer collaborator e-mail activity was not
uniformly appreciated; students did, however, state a desire for more
instruction on how to search the Internet. (AEF)

Myself as Website: An Evaluation

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Myself as Website: An Evaluation

Rationale for tasks

This paper discusses the learning issues involved when setting computer literacy objectives for graduate students in Education. Stated and evaluated here are several simple computer use assignments representing an approach to literacy which is teacher-centered, minimally integrated with subject matter content, and having low cognitive-level task demands. The three assignments involved using Email, consulting my Website, and accessing the Internet. These literacy goals were sought in two twelve-week summer courses for graduate students in Education on the course topics of Human Learning and Introduction to Educational Research. The students were mostly in their first and beginning second year of graduate school.

The tasks assigned were simple and routine, intended to give students mere "exposure" to three computer functions. The Email assignment was to procure two critiques of an assigned class paper through Email from two other students in the class. The web site assignment involved getting class materials from my Website, materials which could not be procured in any other way. These materials included syllabi, a model case study, guidelines for writing a case study, guidelines for doing a research paper critique, APA style information, and information about Internet manners (netiquette). The Website also contained personal and professional information about me, their instructor. The Internet assignment involved identifying and then including an information piece to serve as a bibliographic item for the assigned paper. Clearly, these tasks rank very low (easy) on any continuum of computer uses. They are primarily tasks of contacting people and sites and also printing information.

I chose simple tasks because I do not consider myself a teacher of computer skills, but rather a teacher of content. I think I covertly felt that each student expends a fixed amount of effort on class assignments and my value is that the most amount of effort should be placed on content. In the pedagogical literature of my field (see e.g., Ralston and Beins, 1996), teaching with computers is a visible current direction and that teaching can feature very sophisticated uses. Moreover, to teach without computers, as note these authors, is considered shameful. It was therefore necessary to include some sort of activity. However, both classes met at night, and many students had full time jobs, attending class after work. (This is common for Education Schools). I thought that if I made the tasks not difficult, students were more likely to complete them with a positive attitude toward these computer functions for academic work and communication. In this paper, I want to more carefully analyze this assumption and then to reconsider it.

"Costs" of the tasks

Seemingly, requiring the above stated rudimentary computer based work is a reasonable way to begin. Because the tasks are easy, most students ought to successfully complete them thereby having a pleasant computer-encounter. On the other hand routine assigned tasks requiring minimal effort focus student attention on "getting done" and not on what the task means (Laurillard, 1993). This could have off putting consequences in the sense of not stimulating student growth. Moreover, the student should be able to focus on the task at hand and not be distracted by irrelevancies. They should not be overly concerned with figuring out how to work the computer. However novice users are inevitably confused with the presenting interface. Our system was no exception. Anticipating such confusion and trying to avoid it, I held an early

class session in the computer laboratory so they could learn to sign on (identification and passwords were given ahead of time) and use menus. Generally speaking and judging from their comments and strained faces, it was not an easy experience for them. As Laurillard (1993, p. 204) notes, computers demand new forms of learning activities (e.g., looking for the "on" button, wondering why nothing is happening, etc.) which are essentially alienating and counterproductive to learning. Therefore although my hoped-for pedagogical outcome might at first seem sensibly sought through easy tasks taking little time, this tactic may have hidden pedagogical costs. A confusing interface can require some of that fixed amount of student effort ultimately limiting how extensively a given task is considered.

The computer literacy tasks used here were considered adjunct activities in this course. The subject matter content was more important. This distinction led me to keep separate my learning aims for the subject matter and for the computer uses. I did not integrate subject matter with computer activities. Reportedly, courses which do integrate them, by allowing students to select projects relevant to their curriculum majors, currently taken courses, or their professional goals are quite successful (Dalbey, 1996). It would however have been quite time consuming to form subject matter specific computer tasks that more strongly engage students and doing so could have placed me at the edge of my computer know-how. I am concerned in this paper with the question that . . . even though my posed assignments were not deep learning experiences because of the above mentioned constraints were these assignments worthwhile overall and perceived favorably by the students?

The starting point of my research is probably not an uncommon one. Many faculty probably are computer neophytes, yet want to teach using computers. My thinking was that it was

probably advantageous to require even this minimal level of computer use even though the informational and instructional power of the computer is barely engaged. I did a small evaluation study here to determine the nature of student reactions to these simple computer use assignments.

Method

Three fairly simple assignments were made at the beginning of the course. First, students had to learn to use Email to send and receive messages to each other about the case studies and research projects they were assigned to create for the course. Each student had to hand in the Email comments from two other students about their papers. It was emphasized the comments were to reflect a critical reading. Second, students had to enter my Website to obtain selected information about the course, and to procure materials, such as model case studies, to assist their learning in the courses. Third, they had to enter one of the Internet search engines and find information about their case study or their research problem and they were to document that information in their presentations. Data collected from a brief anonymous questionnaire given at the end of the course provided information as to the perceived value of these assigned activities. Spontaneous classroom comments and questions throughout the course also yielded much information about student experience of these teacher imposed literacy objectives.

Results

Classroom Data

The basic data come from several vivid impressions of class reactions to the assignments and from an objective questionnaire completed anonymously and given at the end of the courses. The questionnaire asked students to respond to whether the computer assignments per se should

be retained, eliminated, or significantly changed, and it also asked for students' comments on those assignments.

Several vivid and distinct impressions were formed on the basis of interactions with students in these courses. During the first class meeting in both courses, faces and comments showed many students were not pleased with this computer use requirement. I was pelted with questions about how this would be done; even a few said it could not be done because they could not do it (no computer, no time, don't know how, etc.) Their comments indicated they obtained a <u>limiting</u> <u>set</u> toward instruction that was closed to challenges, focusing instead on their lack of knowledge and being hampered by unfamiliar tasks and external factors (Ertmer, Newby and MacDougall, 1996). Standing firm, I told these students about the next class session to be held in the computer laboratory where they would be given instruction about these assignments. The average evident attitude was not one of "Let me at it!" or "Goody, we're going to learn the computer." In fact, in one class I had to stand in the center of the room and while dodging their incessant questions, I stomped my feet and said – "This is technology, just go out and try it. That is how you learn it!" It is not clear whether students' reactions stemmed from time and effort management issues or from a lack of self direction (Grow, 1997) or from being low self regulators (Ertmer, et al 1996).

The second very distinct impression was that I became involved in their individual projects far more than I think I should have been. Questions and issues plagued me nearly every class session. It upset them when their Email peer did not respond right away, and they had to tell me about that. The materials I prepared for my Website, although I had hoped for such, were apparently not stand-alone. Students could not see what I meant by a "case study" even though I selected a model one carefully and with it also entered into the Website a set of guidelines for

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writing them. I had to re-explain their case study and research project requirements actually more than I think I ever have even when not using the computer. I had to identify key words for them to use while surfing and searching and they wanted to know what I wanted from the search and then how to do it. There was a distinct vocal subset of my students who were not very willing to accept the computer alone as an legitimate authority. What the computer said had to be validated by me. Actually it was not clear whether these student concerns were truly informational, a question of believing the computer, or whether these concerns were due to low self direction and/or low self regulation. The questions and issues that plagued me were consistent with the idea of a narrow evaluative lens (Ertmer et al 1996) valuing specific answers about project requirements not general criteria, and they wanted their success to be set by me (and not the computer!); they did not want to self-impose it.

Questionnaire Data

Table 1 shows the frequencies and percentages of students' responses to the four questions in the evaluation asking them to choose whether they did or did not feel the computer use requirements added to their learning in the class, and whether they thought I should or should not keep the options as presented when the course is given again. Question 4, Should I change the options? is closely related to Question 3, Should I retain the options? serving as a consistency check. This check shows reasonable consistency of the data between the two questions (92 percent to retain the given activities compared to 76 percent NOT to change the activities).

Table 1

Frequency and Percentage of Student Responses to Website Questionnaire

	Response			
	Did/Would		Did Not/Would Not	
Question	Frequency	Percentage	Frequency	Percentage
1. Email Requirement?	36	73	13	27
2. Website?	43	87	6	12
3. Retain Options?	44	92	4[1]	8
4. Change Options?	11	24	35[2]	76
Total	134		58	

[1]One 'no answer'

[2]Three 'no answer'

The questionnaire data of percent choosing retain or not retain showed the students felt the

activities should basically be kept in. Students felt all three requirements should be retained; the

percentage choosing "retain" was much higher than "not retain". The lowest ratio was for Email

of 3 (did add to my learning) to 1 (did not add to my learning). Students liked the Website more

(a ratio of 7 'did add' to 1 'did not add') than the Email option. Some reasons for these different

comparative frequencies were suggested in the comments students made. Students made a total of seventy-five comments; comment types reported here were made by a minimum of 5 different students.

Students reported they liked the convenience of the Website for accessing course information (12 individuals); it added variety to the course (5 students); and it was a "good first experience" and "useful to learn" (6 students). Students often asked me questions at class time about both personal and professional information they found at the site. It has been claimed websites and other options such as Email enhance professor accessibility and break down communication barriers between teachers and students (Ralston and Beins, 1996). Thus, there were reasonably sized subsets of students who responded positively to the assignments, particularly the Website.

The peer collaborator Email activity on the other hand was not uniformly appreciated because students reported their Email peers (6 individuals) did not respond in a timely fashion (in part because the labs were overcrowded) and the activity of collaboration it was claimed "was not taken seriously enough": Some said the Email activity was more "camaraderie than learning" and "not challenging" (7 individuals made the latter two remarks). Reading the Email messages I noted they were rarely substantive and were mostly supportive (e.g., Nice job! Really like your paper!) Clearly, some students conceptualized the assigned Email critique very differently than intended.

Students did however state a desire for more instruction in how to search the Internet and other computer based activities (12 students). This is a double edged sword-on the one hand, students want to further their knowledge; on the other they want to be told such knowledge rather

than discover it. This initial exposure did not create an experimenting, more self directing attitude in many students.

Discussion

Keep these tasks?

The issue addressed was whether the assignment of simple computer literacy tasks could have, all things considered, a positive effect on students. Looking at the numbers alone, the percentage of students recommending the simple tasks be retained in these courses was sufficiently high to support any decision to continue these assignments unchanged. Interfaces confusing to the novice, concerns about time needed to do these tasks and other associated costs did not prevail in students' decisions to recommend keeping these tasks as adjuncts to the courses. Comments in favor of these tasks described them as a "good first experience" (6 students or 14%) so they served their intended purpose for a specific subset of students, probably novices. The percentages electing 'retain' were probably high enough to include also some non-novice or more experienced novices who reacted non-egocentrically and saw the value for novice users. Others however (n=7 or 15%) made more negative comments ("not challenging" etc.). Since the comments are definite and in both positive and negative directions, there are subsets of students having common yet opposite reactions. Dalbey (1996) notes students enter his computer courses varying greatly in background computer experience. He assembles a list of projects from which students can choose in order to accommodate these individual differences. Therefore instead of responding solely to the overall percentage of students' opinion concerning these tasks, and keeping the tasks as is, I will follow the strategies of reflective teaching

(Brookfield, 1995) and use student feedback combined with some theoretical ideas to redesign them.

Some student comments suggest design directions. Submitting papers by Email was suggested. Email needs to become more substantive. The Website was "not too developed" and needed the capacity for answering student questions about course projects and materials.

New designs

One way to change Email involves changing how students and task interact (Laurillard, 1993) as well as enhancing the subject matter content of the task (Dalbey, 1996). This can be done by asking students to draft and revise segments of their paper with Email peer input much like the journal paper submission and review process except that the objective of the process is not to accept or reject but rather to form a better paper: more coherent, consistent, based on evidence and sharply described. Each student plays both roles of author and critic and the overall objective is a better paper for each student. In this way Email becomes a truer idea exchange and both camaraderie and learning are obtained. However as Dalbey (1996) points out, although one does not want to dictate how to do a task, students need structure and cannot be left to drift. Although this task has a certain macrostructure, additional guidance and modeling will be needed to illustrate ways of thinking about and helpfully reacting to the other student's paper. This direction, properly achieved, can enhance student centeredness, subject matter involvement and cognitive level. It could respond to criticisms of the earlier assignment as "not challenging." Most importantly use of Email in this redesigned way may help to focus low self regulating students on the process of writing (and not the product!) enabling them to use more self regulation strategies (Ertmer et al 1996). Self regulatory strategies can be enhanced through

instructional experiences (Weinstein, 1988) although the extent of development can be limited by outside pressures in students lives. Nonetheless, it is important to knowingly challenge students and not let the dependent ones remain that way. And, although more time might be spent in Email activities, these activities ought to promote the development of higher order subject matter objectives. Hopefully the task can be clear but challenging to novices yet engaging to the more experienced user.

The Website could be made more interactive. It could offer students the chance to pose questions and offer sample pieces of text to which the instructor could respond directly or refer students to other sites and references. Student's actual questions about course topics (FAQ's) could be added. Small instructional modules could be included, for example, my colleague (Pingel, 1997) has designed a set of exercises on using APA style where students choose the correct example of the stylistic principle with feedback then given. Changing the Website from an information retrieval use to an interactive student centered and subject matter integrated use would seem also to encourage the use of more self regulation strategies. In the best of all worlds, students could have easy access to this Website at home and at work. In fact four students called such access the "wave of the future" and noted it "meets the needs of commuter students." If problems of computer access and computer task design are appropriately solved, so that the costs (e.g. time, understandibility, etc.) of working on the computer do not overwhelm the benefits, we may make some headway on encouraging more student self direction and true course participation.

In summary, this paper has discussed the results of assigning simple computer tasks to graduate students in order to familiarize them with this resource. Generally speaking, this tactic

"works" but outcomes of more importance (task specific as well as general strategies) can

probably be gotten with richer more interactive designs and more widespread computer access.

This paper argues that an important student outcome to be developed by enhancing computer

based assignments is the students' tendency to become more self regulating in learning course

objectives.

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