THE TEACHING OF RELIGION: MORAL INTEGRITY IN A TECHNOLOGICAL CONTEXT

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Abstract

This paper describes the re-design and evaluation of a full-year undergraduate course, An Introduction to the World's Religions, from a traditional lecture-based model to a Web-based format. The highly personal and valuative nature of the course content, as well as large class size and lack of personal interaction motivated the re-design.

Concern for protecting and validating students' understandings, while at the same time exposing them to new levels of critical awareness, resulted in the choice of several learning technologies that embodied the construct of moral integrity in the post-secondary classroom. Two related pedagogical and affective approaches, those of caring regard and constructivist learning, were embedded in these technologies: computer-mediated conferencing (CMC) and self-paced use of the World Wide Web (Web). Formative evaluation of the learning design revealed 8 categories of student concern and suggested 5 *Lessons Learned*.

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Theoretical Frameworks

An Introduction to the World's Religions (Relig101), is a junior undergraduate course taught over two full terms to approximately 100 students each term. Students are typically in their first year of university and, as in other first year courses, are part of a large enrollment that meets in a theater-size lecture hall. Recent high school graduates who are used to personal interaction with their teacher during instruction find themselves anonymous and voiceless in such a large crowd. Although it is designed to be a non-valuative survey course, the topic of Relig101 is highly personal and emotionally charged to many; and regardless of their reason for being in the course, students may feel uncomfortable.

The instructor for this course in the Fall of 1997, Dr. Ehud Ben-Zvi, was unhappy with the typical course structure which saw a change of instructors for the Winter term. Among his concerns were the class size (74 students), difficulty in providing access to source materials, amount of content to cover by didactic means, lack of authentic context in which to learn, diminished classroom interaction, and lack of personal contact with students.

The affective concerns, in particular, suggest the theoretical framework for this paper. Being deeply concerned with the moral and affective aspects of the learning experience, Ben-Zvi redesigned the course in terms of a teaching style that incorporated many insights from the caring regard approach (Noddings, 1995). An ethic of care and concern for others was exemplified by a mode of teaching in which students' profound feelings about the content are

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validated and protected. At the same time, they are challenged to consider other world views and perspectives, both of their classmates and of members of other religious communities.

Given the nature of the course content, the barriers to learning engendered by class size and structure, and the emotional volatility of the content for some students, Ben-Zvi re-designed problematic aspects of the course. His concern for protecting and validating students' understandings, while at the same time exposing them to, and insisting they share insights into, new levels of critical awareness resulted in the choice of several learning technologies that embodied the construct of moral integrity in the post-secondary classroom. Two related pedagogical and affective approaches, those of caring regard and constructivist learning, were embedded in these technologies - computer-mediated conferencing (CMC) and self-paced use of the World Wide Web (Web).

Elements of Caring Regard and Constructivist Learning

The basic premises on which course re-design proceeded was that both the relationship between instructor-student and that among students were to be based on the principle of caring and of learning through caring. Moreover, caring is also extended to other groups that may not be represented by any member of the learning community of Relig101. In this particular case, caring demands an openness to, and empathic understanding of, a diversity of beliefs, strongly held moral stances, deeply ingrained symbolic languages, ethnic self-identities—at times, multiple ethnic self-identities—and, to some extent, a myriad of (received) constructions of "the other." It demands a personal commitment to struggle and keep struggling for that openness and emphatic understanding of "the other/s" by all the members of the learning community.

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This struggle has obvious moral implications in an increasingly diverse society at the local level, and within an increasingly global environment. An introductory survey course of the religions of the world that is taken mainly by students of programs other than religion, is part of a humanistic perspective that neither can nor should avoid ethical dimensions, but must take them into its very core mandate. After all, a simple recounting of data about this or that group does not promote by itself a stance compatible with the principles expounded, for instance, in the Canadian Bill of Rights.

In addition, a caring teacher of this course must deal with disparities of beliefs and practices within "identifiable" religious or religio-ethnic communities—both within Canada and beyond its borders—as well as that between prescribed beliefs, morals and practices as usually described in textbooks and the actual counterparts in living communities. Clearly, recognition and validation of these disparities is necessary to protect members of the learning community, and others with whom they interact, from a denial of their self-identity or from a negative evaluation by the others of their own identity.

A caring instructor should facilitate the learning of students. The motto for the course was Assisting You to Learn, which means first that You are recognized, and that You are allowed to gain a voice, and above all to take control of Your own learning experience. The instructor negotiates and guides the students rather than imparts pre-packaged knowledge. This requires that the instructor be willing to develop an intensive interaction with students. In this course, this interaction took the form of hundreds of e-mail messages, and an open door policy. It also implied a willingness to accept and care about the fear and/or concern that openness, the awareness of external challenges to one's beliefs, may raise in some students.

A caring teacher recognizes that students are not passive receptors of information, but equitable partners in the active process of learning. Greenbaum and Kyng (1991) characterize the involvement of students in technology-mediated active learning as a participatory design process , in which a "community of participants" is invited to interpret, manipulate, and transform the core learning materials into self-designed and mediated experiences. Students in these contexts approach each "learning task with a set of personal beliefs, motivations, and conceptions about the subject area...they construct individual meanings from the materials...by relating them to their existing conceptions and frameworks of knowledge" (Kember & Murphy, 1995, p.100).

Strategies supported in this view focus on the process goal of experiencing changes in perceptions, understandings, beliefs, feelings, and capabilities as a function of new information (Lebow, 1995). Accordingly, learning design is based on problem-solving linked to students' interests or real-life needs. Traditional learning cultures make this exploratory process somewhat risky, as making mistakes often has a negative connotation. The constructivist context, by contrast, becomes a caring one as learners are invited to the strategic exploration of their errors in knowledge construction in a reflective environment. Student perception-checking is supported through non-evaluative collaborative conversations via CMC and other electronic means. This kind of environment requires a different kind of teacher, a learning facilitator rather than a controller of, and gatekeeper to, specialized knowledge. Constructivist philosophy gives us a way to design and describe these changing roles and environments.

Collaborative conversation is both a strategy and a framework for moral, caring teaching as, in this view, all learning is framed by the process of social negotiation (Vygotsky, 1978). Jonassen (1994) and other learning design theorists describe a discourse-based process of social

negotiation, among all learning partners, which supports both the autonomy and relatedness of the caring classroom. Using a range of communicative strategies including classroom discussion, conferencing, and collaborative work groups the teacher provides scaffolding, engages students in using knowledge, models problem-solving processes, and coaches students in self-questioning and other meta-cognitive skills. Students in these learning cultures learn self-efficacy, taking control of their own learning (Dicks, 1992; Lebow, 1995).

A second key element in constructivist environments is (Brown, Collins, & Duguid, 1989) learning that happens in a real context, and for a real purpose. Situated contexts require learners to make sense of new concepts through shared practice with others -practice that must often take place at the conceptual level through shared discourse (Laurillard, 1992; Schon, 1983)). Providing and structuring opportunities to explore the world's religion-related Web sites and share one's discoveries is an example of situated, reflective, authentic learning - a situation which leads to the development of higher-order thinking skills. Gow and Kember (1993) and Kember and Gow (1994) noted a strong relationship between teachers' conceptions of teaching and student learning outcomes, in particular instructor orientation towards knowledge transmission vs. learning facilitation. The former discouraged students from adopting meaningful approaches to learning, while the latter was less likely to induce surface approaches to learning. Learning facilitation involved the community of participants in the shared task of knowledge production, the products of which are shared through discourse communities.

A third epistemological element is the belief that learners employ *different ways of knowing* in the learning process (Belenky. Clinchy, Goldberger, & Tarule, 1986; Goldberger, Tarule, Clinchy, & Belenky, 1996). This course attracts a diverse group of students, from many religions and cultures, with a slight majority of females represented. Working from standpoint

theory, a teaching/learning strategy designed for different ways of knowing is more inclusive of all learners.

Ways of Knowing and Standpoint Theory

Technology has been described and characterized as rational, rigorous, abstract, and systematic, functioning well only outside the ambiguities of the real world (Winograd, in Edwards, 1990/91). Sherry Turkle (1995) and Turkle and Papert (1991), among others, assert that this abstract, formal operation is opposed to the way in which women in particular are socialized to process information in ways that are concrete, associative, and non-linear in nature. This describes a scheme of connected knowing, which is co-constructivist; created in relation to self and others. Analyses of the way we know suggest that the teaching of all subjects needs to be re-examined, although curricular reforms with technological outcomes have often focused instead on implementing research based on cognitive paradigms and computer metaphors.

Damarin (1991) argues that in the early 1990's technology-based models of instruction have been defined almost exclusively and historically by the "dominant discourse". For example, a large proportion of instructional software is based on the scientific method, focusing on an objective relationship to nature. Much traditional scientific teaching requires a deadening of empathy (dissection), a suspension of disbelief (mathematical problems), and the performance of ritualized experiments. This kind of action on the world, framed by a particular worldview, is substantially different from a pedagogy based on interconnectedness that validates intuition and holistic thinking. This is the pedagogy of the moral classroom.

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With the Web becoming widely available in the mid 1990's, and global communications technologies such as computer mediated conferencing stabilizing, interest has re-focused on a more inclusive design theory called standpoint theory. Based on the research in andragogy (adult learning theory), and working in a multicultural world context, this view suggests that the emphasis on a rational, objective, independent way of thinking and knowing excludes more learners than just women (MacKeracher, 1996).

Standpoint theory (Kirkup, 1995) suggests that women, as the subordinate group in an unequal gender/class system, see the world in privileged and perhaps epistemologically more 'truthful' ways than the dominant group (men). That is, women are representative of viewpoints different from the dominant group, and these are exhibited in different educational aims and the achievement of different educational outcomes. Kirkup points out the moral dimension to this argument: The values and skills of the dominant group are about domination, and therefore not the ones that should be encouraged in an egalitarian democracy. However, learning experiences designed from alternative perspectives "...support the role of education as 'consciousness raising' for subordinate groups, so that any education based on them not only privileges students' personal experience, it is designed to contain activities which require groups of students to articulate personal experience" (p. 5). In a similar vein, Schuster & van Dyne (1984) argue that many of the activities and values that have previously been considered as low status and female should be incorporated into *a transformed curriculum* in order to produce an "inclusive vision of human experience based on difference and diversity, not sameness and generalization" (p. 6).

While not necessarily subscribing to the views of 'different ways of knowing' and standpoint theory, some theorists nevertheless argue that learners employ the cognitive strategies most applicable to the specific learning task and may sample from a repertoire that includes both

objectivist and holistic thinking. In this case, Web-based learning designs with the following elements (Damarin, 1991, pp. 114-115) may connect and empower learners in our diverse classrooms, virtual or physical: alternate representations of truth; dynamic, linked representations of processes; semantic linking of multiple paths; the inclusion of large databases of resources previously unavailable, inviting the inclusion of experiences and diverse worldviews as variables which students might explore; and authentic tasks that neither violate nor invalidate compassion and empathy.

As for Relig101, it was our intention that the learning design correspond with the elements of inclusivity, interconnectedness, and the validation of multiple perspectives. These perspectives were presented *in situ* by the chosen Web sites and explored through the social negotiation required of computer conferencing.

The Course

Introduction

The study described in this section is based on a formative evaluation strategy, for which the main purpose was to obtain information that will improve the design of the course and ideally lead to a higher quality learning experience. This is distinct from summative evaluation, in which the actual learning is assessed. In reality, elements of both are often included in an evaluation strategy.

Formative evaluation, as a process, includes the learner as a co-designer in the experience. This is accomplished through the use of learning logs, questionnaires, observations,

interviews and focus groups. In these techniques the learner may be invited to focus on specific components of the course or the materials, such as conferencing experience or the assessment procedures; examine usability features such as the interface or learner options; or reflect on their affective experiences in the course. For this evaluation we used a combination of strategies, discussed below.

Re-design of Relig101

The course included 25 formal learning meetings, or face-to-face classes (involving 39 contact hours as usual at the University of Alberta). Required pre-reading material consisted, in part, of chapters or sections from two textbooks, but mainly of authentic texts written from the perspective of different communities of faith and accessed through the Internet. The readings in all the main topics (e.g. *Islam, and also Nation of Islam, Protestantism and Protestant Denominations, Conservative and Liberal Christian Viewpoints, Eastern Orthodox Churches, Latin-American Religious Experience, African-American Christianity, Kwanza, The Church of Jesus Christ of Latter-Day Saints [i.e., "Mormons"], Judaism and its varieties, Bahai*, etc.) were studied from multiple points of view. It is worth stressing, however, that none of these points of view was accepted in the class as the standard view point. Instead, the students were asked to reflect on the multiplicity of views, and of religious discourses. They were asked to develop skills so as to contextualize (and deconstruct) the information that they were accessing.

Students were also encouraged to develop their own learning paths within the course, and to recontextualize their learning experience within the general realm of their experiences. Optional material was easily accessible to the students. Moreover, flexibility was encouraged

even within the required sites that they had to visit. One of the goals of this approach was to allow the students to define and follow their own learning paths, according to their own experiences, interests and needs. Thus, in accordance with this approach, the topic of the paper that the students had to write at the end of the term was left open, within the thematic constraints of the course.

Most of the formal learning meetings (classes) included one or more short lectures delivered using PowerPoint presentations. The outline view of the presentation was sent to the students electronically, so as to allow them to concentrate on the issue being discussed rather than on taking notes. Some of the theory bursts consisted of "clarification" discussions that were tailored to the needs of the students. By the conclusion of each section in the course, the students had to write anonymously which points were clear to them and which were unclear. Then a session was organized to address the issues that were unclear to the students. This way of listening to the needs of the students proved to be very effective.

In addition to formal learning meetings, the students began to learn how to interact as a community of learners through their use of the electronic discussion group, and to a lesser extent through a "lunch bag" group. Effort was made to develop a belief in the class that learning involves social interaction and negotiation, not only between them and the instructor, but also among themselves.

The Learning Technologies

Relig101 was designed to support socially-based, collaborative work. Collaborative learning is premised upon a learner-centered model that treats the learner as an active participant

in an interactive group process. In this process, the learner actively constructs knowledge by formulating ideas into words, and these ideas/concepts are built upon through reactions and responses of others to the communication (Bouton & Garth, 1983). Social negotiation, which leads to conceptual development, is well-supported with CMC in combination with such cooperative work systems as hypertext environments (Harasim, 1990). Elements of this collective intelligence include associative links and semantic mapping.

Computer-mediated Conferencing

Harasim (1990) describes cognitive learning and concept attainment as related to collaborative learning: Collaboration enhances connectivity and socioemotional engagement through conversation (verbalizing), multiple perspectives (cognitive restructuring), and arguments (conceptual conflict resolution) which arise in cooperative learning. A system of peer interaction produces a more highly organized cognitive structure by building new relationships among ideas, an aspect we felt could facilitate learning in the affective domain.

With its moral dimension CMC offered many advantages in the learning context of the course. For example, the shared transcripts, always available online to re-visit retrospectively, create an artifact of learning which can be reorganized, reassessed, restructured, and which lead to new relationships of ideas and people, or community of learners. (Harasim, 1990, Burge, 1994). CMC appears to offer a greater degree of interactivity than in face-to-face classrooms (Eastmond, 1992). Due to the social nature of a community which emphasizes extensive and sustained interaction, Kearsley, Lynch, and Wizer (1994) argue that situated learning/constructivism provides the best pedagogical framework for online courses.

Secondly, CMC is much more student-centered than teacher-controlled (Kearsley, et al., 1994). The asynchronous nature of CMC expands user control, a feature of constructivist design, over time and space. Learners can control the timing, amount, and pace of their contributions since opportunities to speak are not limited or constrained by time or turn-taking concerns, or to social position and language ability (Hunter, 1990). In this way, interpersonal contact is extended rather than limited to one class period. Gage (1986, in McGinley and Tierney, 1989) also points to the cognitive enhancements to learning through textual communication because writing involves the purposeful constructing of meaning, that is, "writing is thinking made tangible" (p 24). Metacognitive skills, such as self-reflection, are likewise enhanced. And Burge (1994) identifies the following cognitive strategies supported by CMC: acquiring information, making choices, expressing insights, interacting with peers, sorting and linking ideas, handling parallel discussions, putting ideas into frameworks; and using personal experience in the analysis of ideas (p 34).

Finally, McGrath (1990) highlights the concomitant affective issues of interconnectedness and responsibility to others, self-competence, and personal stress management, and emphasizes the need for negotiated social contracts or protocols as: "The deliberate creation of the very kinds of social norms that apparently arise spontaneously in natural face-to-face groups, and that are very powerful and effective devices for regulating face-to-face communication in those groups." (p 55). The fact that this does not happen without facilitator guidance has important implications for course design.

The World Wide Web

The Web was the second learning technology that was integrated into the course design. This component carried the links to the content or information about the world's religions that was later discussed in class and in the discourse community of CMC. The course Web site was also used for management, providing course information, due dates for assignments, a course schedule, and so on. Although some course development at our University is automatically and thought-lessly Web-based, in this case the choice of this platform was an appropriate and thoughtful one. No other technology offers the wide, free-wheeling, and immediate access to information that the Web does; nor does any other media immerse the learner in so many real worlds. As part of the learning task was to find and evaluate additional sites, the Web also provided learners with an authentic task that was unlimited in scope.

Sherry Turkle (1995) lyrically describes the Web as being "...a new social construction of the computer with a new set of intellectual and emotional values more like those applied to harpsichords than hammers" (p. 90 ff.). Terming this *bricolage*, Turkle extends the traditional, tool-based conception of computing to a constructionist, post-modern, creative intellectual space. It was the potential for learners to work-perhaps for the first time in their post-secondary careers-safely, collaboratively, creatively, and semantically, rather than linearly, that supported Ben-Zvi's teaching philosophy and desired learning outcomes in Relig101.

As committed as we might be to the possibilities of the constuctivist, moral classroom, however, students may remain unconvinced. Accustomed to being passive receivers of information, rather than co-constructors of knowledge, feeling burdened with workloads and suspicious of collaborative work, students have indicated impatience and annoyance with technology-integrated courses that require them to take control of their own learning. We remain interested in probing undergraduate learning culture in some depth.

The Evaluation Strategy

Methodology

The design of the formative evaluation was based on a blend of empirical and qualitative approaches. Transcripts of the electronic discussions were kept and analyzed for recurring themes, and were compared later to anonymous, written comments on the course. These comments consisted of the response to the following question that the instructor sent to the students: "Next time that I teach this course, what should I do differently?" Sixty-eight percent of the class answered that question, including almost all the students present in the classroom at the time the form with the question was distributed. At the end of the term students were interviewed, on a volunteer basis, for 1-2 hours in a semi-structured format. Six students volunteered for the interview, which was conducted by Campbell, a stranger to the students. Always operating from an ethic of care, the volunteers' identities were kept confidential, and participants were allowed to withdraw at any time from the evaluation. As an additional safeguard, the interview transcripts were not shared with the course instructor, Ben-Zvi, although the emerging themes were presented to him, with anecdotal evidence in the student's voice. As well, during the interviews participants were asked to respond to items from the transcripts and written evaluations. The three sources of qualitative data were then compared for common themes, and a series of course design recommendations emerged.

The qualitative data was triangulated within its set, and the validity increased by a further triangulation of the quantitative data. Students were given class time to complete the written

questionnaire. Since students were required to complete an additional survey instrument via the Internet on their own time the return rate was 32 %. The results of this questionnaire are discussed in detail, below.

Evaluation Results and Further Reflections

Analysis

Student comments were analyzed on each instrument three times. The first reading of the data was one of grounding or contextualizing. By reading quickly through the data sets, general impressions were obtained of the tone and direction of the students' thoughts and progress of the course. These impressions tentatively suggested both emerging themes, design recommendations, and a theoretical construct for the paper.

Second, each piece of data (i.e. each individual email message, each survey, each interview) was examined for emergent themes which were listed in a master file. The themes were grouped (below) and, finally, each data set was compared for common themes occurring in all three. As noted above, a further check was provided by presenting anonymous comments to the interview participants for their reflection and reaction. Once the common themes were identified, Ben-Zvi enriched the picture by sharing observations and anecdotes from class sessions and private chats with students. Generally, the data revealed 8 categories of concern for the students.

Categories of Concern

Technology issues.

Students were very concerned about access to computing facilities on campus, as only a small number indicated access to a computer at home and, of those, few had an Internet connection. Students could access on a drop in basis a 50 station lab in the Arts Building on campus, but students often were unable or unwilling to work at times in which most of the stations in the lab were available to them. There are a dozen other courses making use of the facility, with the heavy traffic, and stations were often not working properly, or not working at all. Several survey responses indicated frustration with a program requiring computer use without supplying one computer per student:

> Although the www has much current and useful information, it is extreamly (sic) difficult to access when one does not have a computer at home. The labs are very busy, so one must arrive at specific times to ensure that assigned readings will be completed....I think 20% of final grade dependent on (sic) activities is unfair in view of the fact that financial considerations determine access and availability to internet (sic) material. The www was interesting, but considering the cost of books, I was dissapointed (sic) that the books take second place to the internet (sic).

A second concern was availability of assistance in the lab. This lab is generally staffed with one technician, who is unfamiliar with the course requirements. Because this individual is

under constant pressure from both students and faculty to maintain the lab, personal attention was minimal. Certainly, those students working at home had no access to technical support, via help line or other method. Content help was provided by the instructor on the listserv, but students having technical difficulties would be unable to retrieve it. Students were given one demonstration session, on how to use the technologies, in class, but many found that inadequate.

Related to the access issue is a concern about reliability of the technology, especially the Web. Occasionally a server goes down, but the focus of student comments was the time it took to connect to the course Web site, and the number of broken links. Apparently, concern is not with the computers not working, but in expectations for how it should work.

Finally, student preference for work environment seems to be leaning toward the home, despite the technical and support difficulties raised above. This is consistent with the research on distance students who often report feeling empowered once they overcome their initial anxieties about self-directed learning and technology in general.

Learning to learn.

The majority of the students in this class were first year undergraduates, most of whom were between the ages of 18 and 20. Coming directly from high school, these are learners who have been immersed in a heavily didactic model for 12 years. The experience of working independently, moving towards self-direction, was almost overwhelming for many of them. In addition many, if not most, of the students had only used computers as productivity tools, and had encountered them during work experiences, rather than in the classroom. Although asked,

no one recalled a previous experience in which they had learned with computers. This suggests that public schools are mostly teaching about computers rather than with computers.

These observations point to a need for structured experiences that prepare students to learn with technology. Students are aware that their passive, note-taking skills are not adequate with this new mode of learning, and that study habits in which they read text on the printed page for extended periods of time are not productive in these environments (if they ever were in traditional environments). These structured experiences, offered in a variety of modes, could include orientations to learning technologies, working independently, research (search) skills, selecting and evaluating electronic information sources, effective learning strategies for technology-based material, how to dialogue on conferencing systems, protocol, trouble-shooting skills, and so on.

Of related interest here is the nature of students' preferred learning styles or preferences, and the match with technology. A study adding to the research base (see, for example, Ayerson & Reed, 1995-96; Cennamo & Dawley, 1995; MacKeracher, 1996; Wylie, 1995;) in this area would have strong implications for how we design technology experiences at this level. During the interview, Campbell asked participants how they had found this experience, and followed up with a question about their preferred styles or modalities. Curiously, every one of the students talked thoughtfully about the benefits of working with technologies such as the Web and computer conferencing, but then described themselves as verbal learners, preferring print and lecture to all other methods, and complaining about lack of personal contact. Could this be because students are completely unaware of their learning styles, or that they have learned to adapt them for the mode of instruction with which they have had most experience, or even that they do not have the meta-cognitive tools to be able to reflect on their learning experiences? In

any case, instruction in adapting modalities to a new mode of learning seems necessary, as does adapting the instruction to meet diverse learning needs and modalities.

Emotional impact of content .

The teaching of religion in a technological context, on the face of it, is an odd juxtaposition of emotion-laden content in an impersonal environment. We were very interested in exploring the implications of this 'marriage' of what are, essentially, worldviews. We use the term worldview deliberately here because, to us, technology is as value-laden as this content (Bowers, 1988).

Students talked about the level of personal risk they felt, some because of their own beliefs, and others because of the public nature of the forum, i.e. they could no longer be anonymous in a crowd. This unease manifested itself in reluctance to even begin to participate and/or inconsistent participation; emotional rather than critical reaction to discussion threads; and anger at the tone and content, and even spelling, of others' contributions.

One student recalled being 'scolded' on-line for her views by several members of the group. A second was worried about inaccuracies and erroneous information in the discussions. This student wanted more participation online from the instructor, expecting him to correct or manage student comments. Actually, the instructor had made a decision early on to only observe the discussion, intervening rarely.

Equally, students appreciated the Web for its authenticity, and access to otherwise unobtainable materials, yet felt uneasy at the immediacy and, as one student noted, "rawness" of the content in some of those sites. Sites had been carefully chosen by Ben-Zvi, some of them

controversial, yet the hypertext environment invites users, via links, to go far beyond this information. This student had her horizons expanded as a result: "Very helpful and wide reaching in scope; I appreciate the feminist or women views on the various religions. There are some really excellent links in there..."

As public and uncensored as the Web is, the danger is in encountering harmful information. Again, students really need instruction and practice in how to evaluate such information. For example, this student is unsure about the authority of certain sites: "There is a lot of negative sites about various religions, we need to be careful which links are included for this course. Hard to know if some things are correct or not".

In the end, students questioned whether the discussion forum, in particular, was an appropriate choice of technology for the class discussion.

Nature of the learning task.

In good instruction, interactivity refers to active learning, in which the learner acts on the information to transform it into new, personal meaning. In a constructivist sense, the learner co-constructs meaning by exploring an environment, solving a problem, or applying information to a new situation that he/she helps to define (Jonassen, 1994).

Jerome Bruner (1986, 1990) is largely credited with the emergence of constructivism, postulating that learning is an active process, during which learners construct new ideas based on their current understanding and perspectives. They do this by selecting, then transforming information by organization, elaboration, scaffolding, and other cognitive strategies.

During this process, the instructor (who may be virtual) engages the student in a conversation to help him/her build upon existing knowledge structures. We believe that moral teaching very much embodies the practice of constructivism, with its commitment to a safe environment in which all learners are valued and all perspectives are authorized. It was not immediately clear to the students, however, uninitiated in the process of active learning, that this model was an advantage to their learning.

In Relig101, a number of course design decisions reflected the caring regard of this approach. For example, discussion groups (conferencing) were key to the examination of ideas through the learners' negotiation and sharing of understanding from their own perspectives. The cognitive benefits to this conversation are significant as ideas are made public and therefore malleable, that is, transformable. A virtual discussion, in combination with a hypertext environment such as a Web site, also encourages semantic mapping in which students finally see the interconnectedness of ideas. The process of conversation, likewise, fosters reflective, critical thinking in which all accounts, count. In a moral classroom, aspects of the collaborative environment are negotiated by the learners and the instructor, and protocols established that should make that environment (the conference) safe for all the participants. In fact, the participants felt that this negotiation had not taken place in time to prevent harmful interchanges for which the authors had to apologize later. Many student responses reflected the reluctance with which they contributed after these incidents.

Opportunities for active learning were also represented by the course Web site, which exposed learners to a multitude of authentic contexts, multiple perspectives, and flexible, content/context dependent knowledge construction. Many students described this experience as liberating, as the information they evaluated was not "pre-filtered through theory." One student

noted that his personal views had never been acknowledged before, as his learning task was always to understand the view of the Other, usually the instructor. With this approach, students began to see the time they spent on the Web and in the discussion group as research, the product as new understanding; a set of new mental models:

> I am learning a lot more from the (sic) than I am from the textbooks. The information is easily accessible and is obviously very current. It gives a very clear idea of how these religions are actually practiced in various parts of the world today and we are presented with material straight from people of that religion rather than from academics.

The Cognition and Technology Group at Vanderbilt (CTGV, 1991; 1993) has noted some cautions with hypermedia environments for some learners, however, who experience a high level of anxiety when working in random, non-sequential environments. These learners benefit from learner control with guidance, in which effects of decisions (paths to take, order of instruction, complexity, etc.) are clearly described. These learners also prefer clearly defined learning outcomes, or tasks, and recommended sequencing, from which they can orient themselves at any time. It should be emphasized that a constructivist environment does not abdicate the responsibility of identifying learning outcomes and establishing learning criteria, but rather sets these through a process of negotiation among learners and teachers.

The needs of these learners can be met in a caring context by utilizing a number of strategies. As one example, students expressed frustration at the number of site choices provided to them, having little basis on which to make a selection. The problem is compounded, of course, with each linked site containing many links of its own, and so on. Including only

annotated sites at the first level of access would have alleviated much of the problem for these learners.

Social interaction.

One goal of teaching with an ethic of care is the reduction of the personal and intellectual isolation felt by individuals in a learning environment. This goal was made overt in terms of course design decisions, as the very personal and emotional nature of the content could contribute to a sense of 'otherness' for certain learners. The choice of conferencing as a learning technology addressed this issue directly.

Although a growing body of research, partially cited in this paper, supports computer conferencing as a community-builder that enables learners to make personal connections and explore affective and/or contentious issues in an environment much safer than that of the face-to-face classroom (see, for example, Dicks, 1992), our own emerging data in this and other research projects underway also reveal the opposite point of view: While many learners feel empowered by the perceived safety and protection of an asynchronous environment, many others find themselves voiceless, silenced; abandoned. Ideally, conferencing provides reflective time and space, an opportunity to examine and consider responses before they become public, a degree of anonymity, more equitably apportioned 'air time' and, finally, gives voice to the voiceless (such as unconfident learners). This student appreciated the opportunity to continue the dialogue:

> I loved being able to communicate outside of class with the other students. Most of us don't see each other out of class, so it was nice being able to talk to the people who were interested. Also getting the notes was nice. My hand wasn't so tired! I could take my time!

Pedagogical advantages include increased quality and quantity of responses from more students, and the opportunity to weave themes and threads in a way almost impossible to achieve in a large, synchronous classroom:

> The discussion group was excellent because it allowed every student to contribute and participate in the class on a regular basis. Without the discussion group, there would not have been such an exchange of ideas due to the class size.

However, these benefits can only be achieved through the negotiation of protocols (language, tone, turn-taking, etc.), and outcomes, or expectations for learning. As most of our students, not to mention faculty, are not experienced at these constructivist tenets, they may find this process stressful. This anxiety was communicated in survey and interview results as uneasiness with assessment, the desire to just be "told what to do", a declination of responsibility for effecting the quality or tone of the discussions; impatience with the process itself. In addition, the negotiation process may not have been made overt enough for the students to realize that they were expected to contribute to it. For example, this student was upset at the tone and use of some language but took no responsibility for shaping it:

> ...I am shocked at the way many of the people in the class communicate. University level, and many of them can not even spell the simplest of words, and I am not talking about simple typing errors. A lot of people also appear to not take the time to respect the topics they are learning about: ignorance of simple facts, as well as neglecting to capitalize words that should be capitalized, such as Jesus or God or Islam. I also suspect that a LOT of people don't even to bother to read all of the messages they receive in Intrel...

This comment shares unease with the emotional level of discussion but, likewise, never comments on this during the discussion:

> ...A lot of people seem unable to discuss religion without getting emotional; this class is not to decide what is right or wrong, but an intellectual, theoretical study of religion, and a lot of people don't seem to realize that.

Students identified many of the same issues as are discussed in the literature on computer conferencing, suggesting that, overall, instructors need more learning time and practice to become effective facilitators. Issues highlighted by both students and instructor include concern over the volume and timing of responses, a confusion over private vs. shared mail, unease at the forming of cybercliques, amount of control vs. freewheeling-ness -- all tensions associated with the moral classroom, the constructivist learning environment.

Value-added learning.

Concern with the volume of work in technology-based courses, both for students and instructors, is a theme that has recurred in a number of other course evaluations at this University.

For the instructor, the preparation for a course requires a longer timeline and requires rethinking both curriculum and teaching method. In addition, new materials often must be identified and obtained (for example, a list of related Web sites) and then adapted for a new delivery . Given the newness of the technologies and the inexperience and anxieties with which faculty members approach it, the process often is extended as new skills are mastered, and attitudes are changed. Not only is preparation time lengthened, but instructional time is increased sometimes four-fold (Harasim, 1990), especially with the use of computer-mediated conferencing.

If instructors find it difficult to adapt to a new way of teaching, and the reorientation of working style and time, students find it almost overwhelming. Questionnaire and interview responses revealed alarm at the amount of work and volume of messages in the discussion forum, which they were not prepared to manage.

A common complaint was that on the original home site for Relig101, links were suggested or required, but these sites were not annotated by the instructor. Consequently, students were unable to be selective. This was exacerbated by the number of semantic links students encountered in each site they visited, and the self-imposed expectation that they follow every link. One student referred to "information overload" in this context. Another questioned

the "value-added" of the Web-based activities and the conference on top of regular course activities.

A second observation related to the volume of discussion on the forum. ("The mailing list was neat but if I didn't go for a few days I would have over 100 messages. So by the time you read them you do not feel like going to do the assigned readings."). One coping strategy was simply to lurk on the list, reading messages but never participating or responding. Others tried to reply to every message but were soon exhausted by the effort. An instrumental problem is the management of mail once it is read: Students were unskilled at the techniques many sophisticated users of e-mail have internalized. Obviously, this was not merely a problem of functionality, but of instructional purpose, as well. The conference was designed to enhance reflection, and encourage a higher quality of responses than those often obtained during class time; but as students began to withdraw from the experience the cognitive benefits were diminished.

Supporting active learning.

In a keynote speech at EdMedia/EdTelecom '97 in Calgary, Alberta, David Merrill, of Brigham Young University, exhorted his audience to remember that no learning takes place without opportunities for practice and transformation of flat data structures into knowledge contexts. In a constructivist design, this transformation process occurs through authentic contexts in which learners reflect on and share new understandings through the social mechanism of a dialogue community. A knowledge structure with high emotional impact, reflecting many diverse and potentially competing worldviews, such as the content of Relig101,

in particular benefits from a pedagogical approach that safely authorizes and nurtures lateral thinking.

A didactic presentation, as practiced on campuses all over the world, does not encourage the active engagement of the learner. Very often, learners confuse capturing the lecture verbatim through note-taking with an active learning strategy. Ben-Zvi relieved his students of this passive task by organizing his lectures using electronic presentation software (PowerPoint) in which key points were elaborated, and providing these 'lecture notes' in advance through the class conference. Students were encouraged to download the files in text format for a complete set of lecture notes before the actual class. Many of the students then used these notes as an advance organizer that freed them to elaborate during the actual lecture. In this way transcripts of the theory set were permanently available.

The course Web site extended this framework by focusing learners on the lecture's key points, linked to related sites to be explored before the next class. The Web site was designed to provide an authentic context in which to explore the World's religions by encouraging learners to experience the artifacts of the culture, framed by questions requiring a critically evaluative response for the class discussion. Although survey and interview responses indicated frustration with the number of links available, which they felt compelled to visit, and with the lack of critical annotation to guide their choices, students generally agreed that the degree of active learning would not have been possible without this tool. The following comment is typical of this feeling:

> What a wonderful homepage! Many of us in the class were impressed at how extensive it is! What a lot of work that must have been, but it was worth it! The links were well

chosen to give many perspectives. It was like a 'choose your own adventure book', and we were encouraged to customize our own learning. It was fun, and interesting, and added greatly to the course.

Impact of the instructor.

Campbell's academic department, Academic Technologies for Learning, is a unit providing centralized support for faculty exploring technology-integrated innovations in teaching and learning (Anderson, Varnhagen, & Campbell, in press). As part of its mandate an evaluation researcher, Dr. Stanley Varnhagen, works with instructors to evaluate the design, delivery strategy, and learning outcomes of their re-designed courses. As more of these initiatives reach the implementation and evaluation stage, a number of clear trends have emerged, suggesting strategies for reducing the risks of instructional innovation. The role of the instructor in preparing students for the unfamiliar learning experience appears to be a very key element in the adoption of an instructional innovation.

The relationship between instructor-student and among students themselves was an important concern and one of which much of the learning design was based. Student comments reflect the impact of his commitment to them on their willingness to persist with an approach that was unknown and uncomfortable for them.

1. Without Ehud putting the class slides on the e-mail, I wouldn't have any notes to study from. Ehud was always available by e-mail and monitored the intrel comments and gave additional comments which were very useful.

2. Ehud was very helpful when I asked for help or had a question and I contacted him via e-mail. It is a very efficient way of communicating with instructors who are busy, or who hold office hours when I have other classes. Ehud was very prompt in responding to my concerns, and if he though a particular concern would be of interest to the entire class, he would respond via Intrel-101.

3. Some of our comments were a little silly (me included). We got into a pattern of being critical of what we read and of each other. But Ehud sent us all a polite note and we got back to work. Some of our discussion was also very positive, and it was a joy when we really got going.

The Online Questionnaire

Twenty-four out of the seventy-four *active learners* in the class, excluding the instructor, answered this questionnaire (i.e., 32%). Many of the issues examined inspired an overwhelming consensus of opinion. For instance, all respondents found the course's home page helpful. Ninety-six percent of the respondents considered either "very" or "somewhat useful" the Power Point slides and the Internet texts shown in class (only one student thought them "not very useful"). Slightly above eighty-three percent supported (either mildly or strongly) the extensive use of the World Wide Web as a source for readings for the class.

The respondents were divided, however, about the usefulness of the asynchronous discussion group, with only half of them considering it clearly advantageous. Significantly,

fifteen learners reflected also on their interaction with the instructor through e-mail (i.e., messages sent outside intrel-101, the class forum). Thirteen out of these fifteen thought this type of interaction beneficial (only one expressed mixed impressions, and one had negative comments). It seems, therefore, that the source of the learners' reservations is not to e-mail per se, that is, as a form of communication, but the conference format and above all "its noise." A lingering question is to what extent this reflects still a lack of willingness to (a) hear the opinions and positions of other learners in the class, and (b) to present (and stand for) in a constructive way for their own positions vis à vis other positions in class, and not only (c) reservations about the "quality" of the contributions of other learners.

It is particularly interesting that fifty-nine percent of the respondents said they would have chosen the same or a similar section of Relig101 (i.e., 14 learners), whereas twenty-nine per cent would have preferred a "traditionally" taught section (i.e., 7 learners). Yet, six out of these seven learners (along with the three who expressed "no opinion" in this regard) thought that the PowerPoint slides and the Internet Texts shown in class were somewhat or very useful.

As for technical difficulties, most learners claimed to have experienced few or no problems, and there was no clear correlation between "problems" and "place of access" (i.e., home, computer lab, etc.). Ben-Zvi, however, was aware of learners' complaints about lack of equal access between those who own a computer at home and those who do not. Several of these complaints were voiced to him on different occasions.

Implications: Recommendations for Web-based Course Design

This study was designed as the formative evaluation of a pilot course. A number of important ideas and points of action have emerged; we will address these ideas in the context of course re-design.

As we try to 'think out of the box' on learning design, both for traditionally-delivered and innovatively-imagined course, designers, learners, evaluators, and administrators are constantly testing our own assumptions about teaching and learning. For many of us, the working environments in which we do this are not innovation-friendly, and yet we continue to take the risk because we believe that we're engaged in something so fundamentally transformative that we dare not abandon the enterprise.

In this spirit, we want to conclude by sharing the lessons we have learned about the design and delivery of Web-based instruction

Lesson 1: Technology is a Worldview

We have talked elsewhere about matching technology to desired learning outcome (see also Lesson 4, below). The second piece is realizing that the choice of learning technology frames and structures outcomes. For example, a choice to use CMC is a choice for collaborative, reflective, socially negotiated learning within a supportive and learning community. If Ben-Zvi's identified learning outcomes focused more on developing individual hypotheses about the world's religions, CMC may not have enabled this type of learning.

There are several important issues here. First, learning design must proceed on the knowledge of the pedagogy of learning technologies related to the learning outcomes identified. Too often the process is reversed, with the choice of learning technology made first and driving content design and the delivery of the learning experience, forcing a learning domain into a mismatched paradigm.

In this course, CMC and Web-based learning opportunities were well and appropriately designed, but at least one of these was poorly implemented. The second issue, then, is the delivery and support of the learning technology. Many students noted that the links to content-related Web sites provided authentic contexts in which to begin knowledge construction, but because the sites were not annotated the learning paradigm was not well understood or utilized. Similarly, CMC was an excellent choice for the work of understanding perspectives but Ben-Zvi chose to let the students build their own community, with its values and ethical standards. The latter was, in many cases, unsuccessful as the students felt isolated or unable to cope or respond to inappropriate discourse.

Lesson 2: A New Learning Paradigm

Learning with new technologies sometimes forces a confrontation between and among cultures - student culture, personal religious values, the discourse of technology, and teaching cultures, to name four. These collisions need to be anticipated and surfaced throughout the experience and not left to resolve by chance. Perhaps what is needed is a continuing meta-conversation about the nature and value of technology in various domains.

New models cause a re-evaluation about the nature of teaching and learning in a post-secondary context. Learners come to us, currently, expecting a traditional, didactic approach in the classroom. This expectation was characterized by one learner, in a science-based Faculty, as "being owed a lecture." These learners have had 12 or more years to develop deeply held beliefs about teaching and have mastered the skills and strategies that make them successful in lecture-based classrooms. To be suddenly required to learn and succeed with unfamiliar formats in a short period of time seems to them a violation of trust and a withdrawal of support. Ben-Zvi asks whether learners' reservations to the use of conferencing technology reflected expectations about the nature of the teaching/learning experience in university classes, or reluctance to be forced to deal intimately with their own and others' positions about the subject matter. This is an interesting research question that reflects an epistemologically tangled situation and the interacting effects need somehow to be examined.

Complex learning technologies such as CMC are as yet quite foreign to many students who are used to face-to-face interaction, and they do not necessarily buy or even hear the arguments of learning theorists about superior learning outcomes. These learners need to play with -explore - these new technologies in safe environments where their final grade is not dependent on their immediate adaptation. We need both to provide flexible, distributed materials that help them do this outside of course requirements; at the same time as we build low-risk opportunities to become competent during scheduled class time. In CMC, some of this time must be spent learning protocols to ensure the safety and facilitate the empowerment of discussants.

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All this requires faculty to re-think the design of learning, to focus on process rather than content. If this is accomplished, they will accept that learning to learn is a process skill worthy of careful nurturing and reflected in the teaching mandate of their institution.

Lesson 3: Learners are Stakeholders

During the one-on-one interviews for this course, Campbell asked a series of questions related to participants' preferred learning styles, beliefs about learning, expectations entering Relig101, evaluations of the design of the course, and intentions for seeking technology-based courses in the future. What was surprising was that those students who enjoyed the course as designed still would not seek out another course that was technology-based. Why? We suspect there is an interaction between student culture, learning design, and meta-knowledge related to learning strategies. This is an area for further study. In the meantime, however, we feel it is absolutely essential to seek student support for alternative learning experiences: students are more likely to engage in learning experiences of which they approve; they are more forgiving of access and technical difficulties and more patient of errors in the materials, leading to constructive rather than obstructive criticism; self-efficacy may be enhanced if they are treated like design partners; supportive students provide positive role models for their peers; they tend to be more open to similar learning experiences and to take risks they if feel involved in their own learning experiences; and they are less likely to provide unfair instructor evaluations.

With a view to improving the learning environment and materials available to students, there are a number of ways to achieve *buy-in*. It is highly desirable to involve students in the learning design of a course either through needs assessment or through participatory design

through ongoing evaluation. In other cases, students need to be made aware of the learning benefits associated with a technology-based course through instructor presentations, well-designed orientations, and invitations to reflect on the learning through focus groups, online conversations, and informal interactions. Requiring learners to develop meta-cognitive skills such as analysis of their emerging mastery of learning skills associated with new technologies has additional pedagogical benefits in that learning is enhanced.

Lesson 4: Outcomes Drive Technology and Assessment

We often make two errors in designing instruction: 1) trying to force content into pre-determined strategy, and 2) not using authentic assessment that matches both content and instructional strategy to evaluation strategy. Part of the problem is the tendency to use tool-driven or system-based learning design. Tool-driven design is reflected in a decision-making process which starts with the choice of the delivery platform, such as the Web. System-based design is reflected in the 3-hour per week, 13 week 3-credit course structure where design is based on how much content one can deliver didactically in a 50-minute lecture. Both of these models deny the learning needs of the students and ignore the relationship of content domain to representation of that domain.

In tool-or system-based decision-making we make little effort to match appropriate learning technology to desired learning outcome. For example, if the content domain is affective, one appropriate technology is interactive video. If the decision has already been made to use only the Web, it is hard to solve the problems of bandwidth needed for video streaming.

The result is poorly designed instruction that requires additional cognitive effort for the learner in trying to make sense.

One of the biggest errors instructors are making on this campus is to use the wrong technology, or to use appropriate technology, in a design that obviously adds no value to the learning experience. Learners are very perceptive to this and soon make pragmatic decisions about where their time is best spent for maximum effect.

In this course, students perceived an add-on in the requirement to visit many Web sites that were not annotated for them, while at the same time seeing value-added in the inclusion of authentic contexts that included data elements additional to text (such as music). They also saw CMC as an add-on at first, only towards the latter part of course appreciating its strengths in helping establish community, provide a flexible forum for creative controversy and understanding, and encourage the usually silent to contribute. However, in order to accomplish these goals, the discussion needed to be structured and facilitated; guided and protected. Without these components, the learning technology attributes of safe space, for example, are compromised and opportunities to seize the *teachable moment* are lost. In the re-design of this course, Ben-Zvi realized that he needed to establish and maintain a presence in the forum, however benign, and weave the discussion threads together so that students would begin to see a way to synthesize for themselves the emerging ideas in the knowledge base. Assessment, in this case, may have been more effective if the discussion was structured by negotiated protocol and accomplished via CMC.

The course could also be improved in these areas by 1) using face-to-face meetings for which they are best, short theory bursts of information unavailable elsewhere; as a forum to address questions and important learning issues identified by the students; and as a venue for

personal contact; 2) taking more time and making the effort to educate learners about the pedagogical benefits of each learning technology 3) replacing didactic lectures, where appropriate, with flexible asynchronous experiences.

Lesson 5: Access is a Key Issue

The Web confronts us with an irony - increased access to information and information sources that were never before available on the one hand, and difficulties providing that access equitably to our learners on the other.

Given their initial resistance to technology, learners see the denial on-demand of access to resources on which their grades depend as a betrayal of trust. The universities are caught because the creation and maintenance of infrastructure, especially expensive multimedia labs, is no longer a sustainable practice. The only solution to this dilemma is quite clearly inevitable: Students must provide their own computers and access; the university itself must be accountable for the provision of high-quality content. The University of Alberta is not immune to the hostility from many quarters that this model arouses. And to take this action without due care continues to jeopardize the traditionally less-empowered, i.e. women and lower-income students.

At the University of Alberta, instructors using technology must reserve lab times for their students, in some cases, one year in advance. As we get better in predicting accurate timelines for course development and delivery, this amount of advance planning will become less essential. However, using reserved lab time as a class defeats the pedagogical and logistical benefits of asynchronicity; while students sometimes can not take advantage of the times booked and often endure confrontations with other students working during these times.

A second problem is with Internet access to the University's servers. Currently, the University supports an inadequate modem pool that requires more than one hundred dial-in attempts and a limited time on line once the log-in is successful. This is especially problematic during peak work times when the Internet is jammed. As more students choose to learn at home or in the workplace, access will probably become more the client's responsibility than the institution's.

As we move towards mobile computing and required student ownership of adequate computers, all classrooms must be wired (including infared connectivity), as well as dorms, cafeterias, libraries, and any study spaces.

We must also plan to make Web-based materials, which are dependent on server access, available through additional or adjunct formats, such as CD-ROM. Integrated conferencing suites such as TopClass automatically provide this kind of functionality.

Conclusion

Post-secondary education is under public and political and, in some cases, internal pressure to provide flexible, distributed learning experiences for an increasingly diverse student population. This group seeks access to education beyond that which is contained within classroom walls and libraries and by intellectual authorities. Increasingly, clients demand desk-top or workplace-based learning; access to shared knowledge bases; validation for prior experience; choices about where, when, and how to learn; and assessment that reflects this learning. Responsive learning design will be framed by constructivist, rather than objectivist,

principles. These designs are learner-centered and driven, negotiated rather than imposed, and organic rather than systematic.

For courses requiring students to address issues of potentially high emotional impact socially negotiated, collaborative conversation within authentic learning environments is embodied in a learning design supported by technologies that function together to provide a warm, critical and comprehensive experience.

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