MountainRise

Volume 2, Number 1 (2005)

Table of Contents

Managing Editor's Comment

In her introduction to *Opening Lines: Approaches to the Scholarship of Teaching and Learning*, Pat Hutchings (2000) proposes a "taxonomy of questions" that characterizes the scholarship of teaching and learning (SoTL). The eight cases that constitute *Opening Lines* represent accounts of investigative work into significant issues of teaching and learning in fields such English composition, psychology, chemistry, and history. This issue of *MountainRise*, the first produced by the expanded international Editorial Board, with members from 16 countries and six continents (we hope Antarctica soon will be represented), is a continuation of *Opening Lines* and of two other collections of case studies of SoTL work published by the American Association for Higher Education and The Carnegie Foundation for the Advancement of Teaching, *Disciplinary Styles in the Scholarship of Teaching and Learning: Exploring Common Ground* (Huber & Morreale, 2002) and *Balancing Acts: The Scholarship of Teaching and Learning in Academic Careers* (Huber, 2004).

According to Hutchings (2000), one kind of question that characterizes SoTL is the "What works?" question, one that generates a search for evidence of the relative effectiveness of different teaching approaches. A second kind of question is the "What is?" question, in which the focus is on describing the features of a particular approach to promoting student learning. A "Visions of the possible" question, the third kind, leads to inquiry about what is most essential about teaching and learning in our discipline.

In this issue of *MountainRise* are examples of SoTL work that have been sparked by each of these kinds of questions in Hutchings' taxonomy. **Suzanne Burgoyne, Sharon Welch, Karen Cockrell, Helen Neville, Peggy Placier, Meghan Davidson, Tamara Share,** and **Brock Fisher**, in their study of student responses to Theatre of the Oppressed, a widely-used interactive theatre form, explore a "what is" question. In their description of their module approach to online integrative teaching and learning, J**ane M. Cirillo** and **Cammy S. Artiz** also pursue a "what is" question and present step-by-step guidelines for implementing their model.

A "what works" question is the trigger for **John LeBaron** and **Ieda Santos**' study of ways to promote peer interaction in an online learning environment. Also in pursuit of a "what works" question, **Joan Benek-Rivera** examines how student journals facilitate student and faculty learning. In her study she presents evidence that both students and faculty benefit from the assignments she describes. A "what works" question is the stimulus for **Jean D. Hines, Mary E. Swinker, Diane K. Frey**, and **Kelly M. Broughton** as they explore the effectiveness of a teaching and learning strategy for integrating information literacy into merchandising instruction.

All three questions in Hutchings' taxonomy appear to stimulate both **Kathleen McKinney**'s analysis of the learning log entries of sociology majors and the efforts of **Julie Mills. Mary Ayre, David Hands**, and **Pam Carden**'s to produce "awareness raising" about learning styles in both instructors and students in a variety of engineering disciplines. Not only do the these studies provide evidence for "what works" with respect to strategies to increase learning in sociology and efforts to improve instructors' understanding of learning styles, they also offer "what is" descriptions of student reflections on learning in sociology and of the variety of learning styles of engineering students . In addition, these two studies offer "visions of the possible"-visions of potential interventions at the course and program levels in sociology and visions of teaching and

assessment practices in engineering courses that accommodate the range of students' learning styles.

One of the goals of *MountainRise* is to stimulate dialogue about the nature, meaning, methods and goals of teaching and learning. Therefore, we invite readers' critical responses to any of the articles in this issue. We will include them in "Peak Responses," a section for readers' responses in the next issue of *MountainRise*, appearing in spring 2005. In addition, we encourage readers to contact authors directly via their email addresses found in "About the Contributors."

References Huber, M. T. (2004). *Balancing acts: The scholarship of teaching and learning in academic careers*. Washington, DC: American Association for Higher Education and The Carnegie Foundation for the Advancement of Teaching.

Huber, M. T., & Morreale, S. (Eds.). (2004). *Disciplinary styles in the scholarship of teaching and learning: Exploring common ground*. Washington, DC: American Association for Higher Education and The Carnegie Foundation for the Advancement of Teaching.

Hutchings, P. (2000). Approaching the scholarship of teaching and learning. In P. Hutchings, (Ed.), *Opening lines: Approaches to the scholarship of teaching and learning* (pp. 1-10). Menlo Park: CA: The Carnegie Foundation for the Advancement of Teaching.

-John Habel, Managing Editor

Contributors

Cammy Shay Artiz [cammy.artiz@hccs.edu] teaches Political Science courses at Houston Community College - Southeast College, where she is involved in the Mexican American/Latino Studies Program, the Peace Studies Institute, and the HIV/AIDS Peer Educators Initiative. As a result of work with colleague Dr. Jane Cirillo, Southeast College was accepted into the Carnegie Academy for the Scholarship of Teaching and Learning Campus Program as an Affiliate in 2004. Her research interests are in integrative teaching and learning strategies in the online and hybrid environments. She earned her Doctor of Philosophy degree in Political Science from Rice University in 1985.

Mary Ayre [mayre@glam.ac.uk] currently manages the study support provision at the University of Glamorgan, Wales, UK, having worked as a freelance researcher and in secondary and tertiary education as a teacher, lecturer and staff developer. She has been involved with many equity initiatives, particularly in the field of science and technology education. She returned to the UK in 2002 after nine years in Australia, during which time she coordinated the University of South Australia's Inclusive Curriculum project, which received an award from the National Women in Engineering Committee of Engineers Australia. Mary holds a BSc (Economics) from the London School of Economics, and a BSc from the Open University

Joan Benek-Rivera [jrivera@bloomu.edu] received a Ph.D. in Management from Texas Tech University and is an Associate Professor of Management at Bloomsburg University of Pennsylvania where she teaches courses in human resource management, managerial communications, people skills, and professional development skills. Her research interests are in management education and human resource management topics, and she serves on the Exam Writing Panel for the Human Resources Certification Institute. She also serves as an Associate Editor for the Journal of Management Education.

Kelly Broughton [kmoore@bgnet.bgsu.edu] is an Associate Professor and Interim Associate Dean for Information Technology for Libraries at Bowling Green State University. She earned a M.L.S. from Rosary College in 1991. Her research interests include information literacy and technology.

Suzanne Burgoyne [BurgoyneS@missouri.edu] is Professor of Theatre at the University of Missouri-Columbia, where she teaches directing, script analysis, TO, and graduate seminars. Fellowships include a Fulbright, Kellogg National Fellowship (leadership and interdisciplinary studies), and 2000/2001 Carnegie (SoTL). Suzanne was named 2003 Outstanding Teacher by the Association for Theatre in Higher Education. Currently, she continues her research on the pedagogical potential of interactive theatre as campus co-chair for the Carnegie/AAHE cluster on multicultural SoTL. She also directs and translates plays. In her spare time, she is an avid reader, and writes children's stories, several of which have appeared in Highlights.

Pam Carden [pam.carden@unisa.edu.au] is a Research Associate at the Centre for Research in Education, Equity and Work in the School of Education at the University of South Australia.

Jane Marie Cirillo [jane.cirillo@hccs.edu] holds a doctorate from Columbia University. She is a full-time faculty member at Houston Community College - Southeast College,

where she teaches psychology courses. In addition to teaching, she serves as a Faculty Senate Delegate, is developing an online psychology master course, and is involved in several committees dedicated to the development of curriculum in the psychology discipline. As a result of work with colleague Dr. Cammy Artiz, Southeast College was accepted into the Carnegie Academy for the Scholarship of Teaching and Learning Campus Program as an Affiliate in 2004. Her current research interests include integrative teaching and learning strategies in the online and hybrid environments.

Karen Sunday Cockrell [CockrellK@missouri.edu] is an Associate Professor in the Department of Educational Leadership and Policy Analysis at the University of Missouri - Columbia. Her research interests focus on American Indian education and teacher licensure and professional development policies. Her teaching focuses on developing theories of ethical practice and critical perspectives on education politics and policy and among teacher education and graduate students

M. Meghan Davidson [mmd75b@mizzou.edu] is currently a doctoral candidate in Counseling Psychology at the University of Missouri - Columbia and will graduate in August 2005. Her dissertation consisted of constructing sex-specific scales to measure adolescent attitudes regarding dating relationships in an effort to create appropriate evaluation tools for sexual assault and relationship violence prevention. Her research interests include prevention, sexual assault and domestic violence, multicultural issues broadly defined, and career development. Ms. Davidson personal interests include traveling, reading, hiking, and spending time with friends and family.

Brock L. Fisher [fisherb2@bethelcollege.edu] an Assistant Professor of Theatre at Bethel College in Mishawaka, Indiana. His research interests include ethnography, musical theatre and folklore. Brock is currently finishing a major research project on utilizing the tools of playwriting to report ethnographic findings. In addition to research, Brock has performed starring and feature roles in over thirty live theatre productions, from Captain Von Trapp in The Sound of Music to Polonius in Hamlet. He has directed both new and classic productions in collegiate, community, and church-based venues. At Bethel College, Brock teaches courses on directing, acting, and musical theatre.

Diane Frey [dfrey@bgnet.bgsu.edu] is an Associate Professor at Bowling Green State University. She earned a doctorate from Iowa State University in 1989 and M.A. from Western Michigan University. Her research interests include Pedagogy: Critical Thinking and Problem-Solving, Innovations in Technologies, Information Literacy, and Assessment of Student Learning Outcomes.

David Hands [DavidH@sha.com.au] commenced at the University of South Australia in 1989 as a Lecturer in Mechanical Engineering after fourteen years experience as an engineer in manufacturing and the power industry. Whilst at the university he was heavily involved in teaching and learning initiatives and improvements and was awarded two Teaching and Learning Grants, as well as teaching excellence awards. He returned to industry in 2002 and is working as a senior engineer providing design and engineering support to Collins Class submarines. David holds a degree in Mechanical Engineering and a Graduate Diploma in Mathematics both from the South Australian Institute of Technology.

Jean Hines [hines@bgnet.bgsu.edu] is an Associate Professor at Bowling Green State University. She earned a doctorate from The Ohio State University in 1990 and a M. Ed. from Bowling Green State University. Her research interests include curriculum

assessment, information literacy, and consumer behavior.

John LeBaron [jlebaron@wcu.edu] is the Jay M. Robinson Distinguished Professor of Educational Technologies at Western Carolina University and Emeritus Professor of Education at the University of Massachusetts. A former Fulbright scholar in Finland and Gulbenkian visiting professor in Portugal, his research interest stems from online teaching, examining methods that promote peer community-building and the student construction of knowledge, especially in international settings. He is former Executive Director of Massachusetts Educational Television. His Web site is located at: http://paws.wcu.edu/jlebaron/.

Kathleen McKinney [kmckinne@ilstu.edu] is Cross Chair in the Scholarship of Teaching and Learning and Professor of Sociology at Illinois State University. McKinney has numerous scholarly publications including co-authored and edited books, and refereed articles in the areas of relationships, sexuality, sexual harassment, higher education, and college teaching. She served three years as editor of Teaching Sociology. McKinney was a 2003 - 2004 Carnegie Scholar. She has also received numerous teaching awards including Illinois State University's Outstanding University Teacher, and the American Sociological Association's Hans O. Mauksch Award. Currently she teaches a senior thesis course and is designing a teaching sociology course.

Julie Mills [julie.mills@unisa.edu.au] is a Senior Lecturer and Program Director in Civil Engineering at the University of South Australia. Prior to commencing at the University in 1996, she worked for fifteen years as a structural engineer in private industry. She has a BE (Hons) from Adelaide University, a MTech. (Civil Engineering) from Deakin University and a PhD from Curtin University in the area of structural engineering education. Her primary research interests are in cold-formed steel structures, engineering education and women in engineering. Julie is currently Chair of the National Committee for Women in Engineering in Australia.

Helen Neville [hneville@uiuc.edu] is an Associate Professor in the Department of Educational Psychology and the African American Studies and Research Program at the University of Illinois at Urbana - Champaign. Her research interests center on two interrelated areas: general and cultural factors influencing the stress and coping processes of African Americans, particularly rape survivors, and the development and consequences of racial ideologies among racially diverse populations. Her work has appeared in a wide range of journals including, Journal of Counseling Psychology, Journal of Black Studies, and Psychology of Women Quarterly. Currently, she is the associate editor of The Counseling Psychologist.

Peggy Placier [PlacierP@missouri.edu] an Associate Professor in Educational Leadership and Policy Analysis at the University of Missouri - Columbia. She has worked as an educator and community activist with programs for low income children and adults. Her research concerns teacher education and educational policy processes at state and local levels, and her teaching focuses on developing critical understandings of education policy and research among preservice teachers and graduate students.

Ieda Santos [I.M.N.Santos@warwick.ac.uk] holds a Master's degree in Education from Massey University College of Education, New Zealand. She is currently a doctoral student at University of Warwick Institute of Education, United Kingdom. Her research focuses on online community building and the social construction of knowledge in

computer networked learning environments. Other related works include technology infusion in Higher Education settings in developing countries and the moderation of online dialogue.

Tamara Share [listen222222@yahoo.com] currently works in a group practice in Durham, North Carolina, conducting individual and couple's counseling. Her areas of interest/expertise include: health psychology, developmental concerns, anxiety and stress management, career and life planning, cultural identities, and mind-body awareness. Tamara has a diverse professional background. She has taught courses in areas such as Health Psychology, Introduction to Multicultural Awareness and Career and Life Planning. Previous positions include Practicum Coordinator, Counseling Services, SUNY-Buffalo, 2) Director, Worksite Programs, Wellness Council of West Virginia, and 3) Organizational Consultant, Career Resources, Inc. Current personal interests include outdoor activities, yoga, and music.

Mary Swinker [swinker@iup.edu] is a Professor and Chair of the Human Development and Environmental Studies Department at Indiana University of Pennsylvania. She earned a doctorate from The Ohio State University in 1991 and a M. A. from Kent State University. Her research interests include historic textiles, consumer behavior, curriculum assessment, and information literacy.

Sharon Welch [welchs@missouri.edu] is Professor of Religious Studies, Women and Gender Studies, and adjunct professor of Educational Leadership and Policy Analysis at the University of Missouri-Columbia. She is the author of A Feminist Ethic of Risk (Fortress, revised edition, 2000), Sweet Dreams in America: Making Ethics and Spirituality Work (Routledge, 1999) and After Empire: The Art and Ethos of Enduring Peace (Fortress, 2004). She writes and lectures widely on postcolonial comparative religious ethics, alternatives to empire, and the ethical challenges of multiculturalism. She holds a Ph.D. from Vanderbilt University, and has taught at Rhodes College, Harvard Divinity School, Uppsala University, and the University of Amsterdam.

Reflections on Learning Sociology: Analysis of Learning Log Entries*

Kathleen McKinney
Cross Chair in the Scholarship of Teaching and Learning
Department of Sociology
Illinois State University
Normal, Illinois, USA

Abstract

Little is known about how sociology majors learn the concepts and skills of our discipline. In the tradition of classroom action research, I analyzed the content of learning logs or journals kept over a period of at least two weeks by the eight sociology majors in my senior capstone course. Strategies to increase learning of sociology that emerged from the students' entries included reflection, application, persistence, collaboration, seeking help, retention, connections, and time management. In addition, results indicate that "stronger" students (more persistent, participatory, and earning higher grades in the course), had lengthier, more elaborate, more reflective learning logs.

Introduction

My purpose here is to investigate what and how sociology majors learn in their sociology courses including my Senior Experience course, based on their reflection and self-report in a learning log assignment. This study is an example of classroom research (e.g., Cross and Steadman, 1996). I am interested in my students' perspectives on their learning, the fit of these perspectives to extant theories and other literature on learning, practical implications for my teaching and courses, and sharing my students' insights with other teachers of sociology and related disciplines.

Extant empirical work has involved interviews, case studies, focus groups, journals, or "think alouds" to assess students' study strategies or views of learning in disciplines other than sociology or across multiple disciplines (e.g., Albaili, 1997; Calder, 2002; Case & Gunstone, 2002; Johnson, 1994; Light, 2001; Nelson, 1998; Park, 2003; Paulsen & Gentry, 1995; Prosser, Walker, & Millar 1996; Van Etten, Freebern, & Pressley, 1997; Yaworski, Weber, & Ibrahim, 2000). The student journal (Case & Gunstone, 2002; Park, 2003) and "think aloud" studies (Calder, 2002; Wineburg, 1991, 1992) are the most similar to this study. In journaling, students reflect in writing on an assignment after engaging in it. In "think alouds," students are asked to reflect-usually out loud-- on their behaviors and thinking processes while engaging in a learning task or situation.

In sociology, there is a vast literature on teaching and learning. Yet, in contrast to the present study, this work generally does not involve sociology majors, use qualitative data, or focus on student perceptions about learning in the discipline. For example, research related to assessment is relevant but focuses on learning outcomes rather than on strategies students use to learn from the students' point of view. Many other studies in sociology have focused on outcomes or students' perceptions of one particular assignment or teaching strategy in a particular course (see many examples of this type

of work in papers in Teaching Sociology). More closely related to my work, Dietz (2002) included self-reported behaviors of students in a study of correlates of success in a large introductory sociology course. Dietz defined success as total points earned. Factors significantly and positively related to total points earned included attendance and reading the required materials. Dietz, however, studied nonmajors using a quantitative questionnaire.

Two recent qualitative studies focus on student perceptions about learning sociology: a group interview of nine honors sociology majors from around the United States (McKinney, 2004) and face-to-face interviews with 21 sociology seniors at one institution (McKinney, 2005). Results that emerged from these qualitative data include that students reported a variety of types of connections as critical to their learning of Sociology. These connections were interpersonal (e.g., between themselves and instructors or peers), situational (e.g., between material or learning in and out of class), and substantive (e.g., between abstract material from a reading and application of that material to something concrete). In addition, relevance and application of material, and reflection were other themes for enhancing student learning from the viewpoint of the students in these two studies. The present study also looks at sociology majors' perceptions of learning but uses a different methodology-- learning logs or journals.

In the extant literature, journaling or dialoging has been discussed as a pedagogical strategy used with sociology students in specific classes. Generally this work has not used journals to focus on the perceptions of majors about learning in their discipline. Rather, these articles have included discussions of ethical issues surrounding using journals in classes (e.g., Grauerholz & Copenhaver, 1994), the use of journals to help students apply sociology to concrete or personal situations (e.g., DeLamater, Hyde, & Allgeier, 1994; Fisher, 1996; Hollander, 2000; Karcher, 1988; Reinertsen & Wells, 1993), student perceptions of assignments or pedagogies as found in their journals (e.g., Hattery, 2003), and the lack of a relationship between keeping journals about course material and student test scores (e.g., Day, 1994).

I draw a number of conclusions from this past literature. Empirical work on student learning in a number of disciplines indicates that students can reflect on their learning and on teaching strategies when asked to do so. Some differences in study and learning behaviors do help to distinguish more and less academically successful students. A few demographic and academic background variables have been studied and are related to learning. Finally, the effectiveness of study strategies may becontext specific.

I could find no published prior work that has used learning logs or learning journals specifically to assess strategies used by sociology majors for learning the discipline. In this study, I analyze the content of learning logs kept by eight sociology senior majors over a two-three week period. The use of learning logs allowed me to focus more on learning than on teaching, and to look at learning from the students' point of view and via their own words. As is often the case with classroom research, this study involved a small number of students from one department. Yet, results are useful to others both in sociology and beyond in terms of whether they confirm past results on learning, indicate any study strategies unique to the discipline, suggest classroom research ideas to other instructors, and stimulate reflection by instructors on the teaching and learning of their majors.

Methods

The learning log was a required, graded class assignment worth 10 percent of the course grade in my fall 2003 section of Senior Experience (N=8). The eight students consisted of six women and two men. One student was African American, the others were white; three students were nontraditional (in terms of age and fulltime jobs/family or other obligations such as active military status).

To use the learning logs as data for this study, I submitted an IRB proposal that was approved before the start of the semester. Near the end of the semester, after the logs were written and turned in for course purposes, students were asked for permission to use their learning logs as data for this study and promised confidentiality. All eight students gave permission. Analysis of the logs did not begin until after the semester ended and grades were submitted.

Students received a copy of the learning log instructions, and they were reviewed and discussed in class. In addition, the graduate teaching assistant wrote out a high quality example entry for a learning log, which was shared with the students before they began their logs. Students were required to keep their logs for at least two weeks and to make at least six separate entries of at least one to three pages in length during weeks 9-14 of the semester. The number/length of entries and the time frame were chosen to provide a minimum standard to the students, to ensure that students were already immersed in courses and learning for that semester, and to not overlap significantly with assignments that were directly part of their senior thesis. The following questions or probes were included in the instructions. Students were required to respond to these. They were encouraged to add other reflections as well.

1. At this point in the semester, what am I learning in my various sociology courses?
2. What am I doing to learn the content and skills I am learning this semester? For example, how often and in what ways do I interact with sociology peers and sociology faculty? What do I do to prepare for class? What do I do in class? How do I study? How do I prepare for exams and projects? Am I keeping up with reading and other assignments?
3. How would I describe my study style?
4. What am I finding difficult to learn or do related to my sociology classes? Why? How have I overcome this difficult learning situation(s)?
5. What might I do to increase my learning?

Qualitative analysis was conducted using an inductive process looking for responses related to each of the probes or questions in the learning log instructions. I focused on ideas, themes, similarities, and contrasts that emerged from the data at the level of phrases or sentences within the entries. I then looked for additional themes or patterns that seemed to be beyond the specific questions to which they were asked to respond (e.g., comments on the learning log assignment itself; other concerns they have about learning). Finally, I looked for any differences in the themes as well as general, qualitative differences in the logs or responses in terms of different subgroups of students based on my sense of their motivation and achievement in the course.

Results

What Are These Students Learning?

Student responses related to what they were learning fell into the following five categories. First, all the students talked about concepts or topics they were learning about in their elective, substantive courses. For example, one student commented several times on learning more about Islamic fundamentalist religions in Sociology of Religion. Another mentioned Goffman's work on excuses and justifications from Social Psychology. Learning about the role of race, class, and gender in the Global Social Problems course was pointed out by another student.

Second, all the students mentioned skills they were learning and using in the senior experience course. These included using SPSS, doing and interpreting statistics, finding sources, writing a literature review, writing in a scholarly journal style, applying theory, completing IRB forms, giving a professional oral presentation, writing a research report, peer reviewing of others' work, conducting interviews or program evaluation, and using their sociological imagination. Two other types of skills were mentioned by a couple of the students in relation to this or other courses: time management, and group work skills such as negotiating and compromising.

The third category of responses included statements related to what the students were learning about their learning. For example, three of the students talked about learning the importance of connecting what was learned in past sociology courses to senior experience. Others made reflective comments on their learning such as "I am also learning that the study skills that I am currently applying are good enough to get B's. However, that is not good enough for me." Another stated that she learned "the strength and importance of being able to work hard on a task, especially independently."

Fourth, half of the students briefly noted something else they learned about themselves or their lives. Two of these students talked about learning or changing values related to their views on other religions and on race/class/gender awareness, respectively. A third student noted how attending a panel of women who had worked in the Peace Corps had taught her "I want my own life to have a mission like that!" A fourth student spent the majority of her learning log discussing what she was learning about her self, her husband/marriage, her children, and her job.

Finally, two students mentioned that they were not learning much in their courses this semester; for one this was due to boring and excessive repetition of material, for the other to her lack of motivation. Three students noted having senioritis or being bored, uninterested, or distracted at times. For example, one student wrote "When I first took Sociology courses, I was excited because I was learning something new. Now, in my final semester, I find myself getting bored in class. I feel I am listening to a broken record player. Although the course material and evaluations are harder and require more time, the class material is not as interesting as it used to be."

Thus, students provided many examples of specific sociological content or skills they were learning, yet, they also responded with two general types of skills: time management and group work skills. In addition, they discussed what they were learning about their learning and what they were learning about themselves. Finally, some students reported learning little or less than they could.

Study Behaviors and Strategies (What Are They Doing to Learn?)

Specific study strategies. Most of these students discussed very specific, idiosyncratic aspects of their study behaviors in some detail. The students reported using many common study behaviors including taking good notes, reviewing notes, talking to the instructor, and using study guides. The majority also emphasized the importance of doing assigned readings and, preferably, doing them before the relevant class period. Wrote one student, "Preparation for class is the most important thing in order to be a successful student. One of the best things I do in order to prepare for class is try and read the required material." Yet, a minority of the students confessed to rarely, if ever, doing the required readings in their courses, relying on readings only when absolutely necessary because of missing notes or not being able to figure something out. One of these students said, "I did not do any preparation before class. Sometimes I look over the material, but usually I go to class unprepared because I find it easier to learn if it is fresh in my brain. It is difficult to teach the material to myself."

Several commented on the usefulness of submitting multiple drafts of work for feedback, then rewriting. For example, "I have also found it very helpful that Dr.--- has required us to turn in certain sections of our papers…It has been rare that I have turned a paper in ahead of its due date to be looked over by the professor. It really does help." Only three of the eight students explicitly mentioned the importance of going to class but, given the emphasis by all on taking good notes, it would appear that most find value in attending class.

The role of others. All the students mentioned, more than once, the importance to their learning of working with others, hearing other viewpoints, asking others questions, getting help from others, discussing material with others, etc. These others were instructors, teaching assistants, classmates, or peers. For example, one student wrote, "Professors outside of the classroom can be a lot more helpful than inside the classroom; the guard is let down and the relationship is more of mutual respect…" Referring to relationships with his peers outside of class, one student wrote, "Even though we talk about current events, we look at these events using a sociological point of view." Finally, another view was "One of the best ways to learn something is to teach it to someone else."

Yet, the students are ambivalent, at best, about group work. Several students discussed why they don't like group work (e.g., not well designed, students not prepared, waste of time, free riders). "I dislike group work. I am often the one who has worked super hard to get the higher grade, while others slack off," wrote one student. Three students pointed out that sometimes group work is very helpful and, other times, it is not. For example, "…I think that group work is a fantastic learning style for those who are more hands on learners, but not when it is in a lecture hall of three hundred people."

Concerns about time. All the students raised the issue of time as related to their learning; however, the point they often made is that time is a problem or that they do not handle time well. They also wrote about time management, setting priorities, planning, being organized or efficient, and budgeting and balancing time. "I am keeping up with the assignments that are turned in for a grade." "It is very important to try not to fall behind on work for this class." "I have been spending a lot of time on this class."

Out-of-Class learning. The majority of the students talked about out-of-class learning experiences and their value to learning. They mentioned participation in Alpha Kappa Delta (honorary sociology society), attending scholarly presentations, getting help from a

faculty member with expertise in the area, doing internships, and paying attention to what is in the media or to what happens at work. Students wrote, "To gain more knowledge, I go to [outside] lectures relevant to course material." "I recently joined AKD…I think that this will help me meet and interact with a lot more people within the major." Or, "I went to see a movie last night. The movie got me thinking about an entire range of sociology issues."

Doing, application, and connections. Related to this was the almost universal emphasis on the importance of learning by doing, learning by application, learning by concrete examples, and learning by connecting things to their lives. Observed one student, "One thing I have found helpful is doing panel presentations in my sociology … class." Another stated, "…I tend to learn concepts best when I can apply them to my life or some aspect of the world…" and "The way I learn that is best for me is by doing." Finally, "experiences in class are made even more useful when applying them and making connections to the real world experiences I have been going through," stated another student.

Several mentioned the usefulness or necessity of drawing from or connecting to material or skills from past courses or other current courses as in "…there are some things that I have learned in each of these classes that have helped me in the other class…" "The skills that I learned about interview questions and how to ask the questions and also create probes in my Senior Experience class has helped me in this class."

In summary, students pointed to a variety of behaviors that help them learn including good basic study skills (e.g., taking good notes, talking with the professor, doing assigned readings, submitting drafts), interactions with peers and faculty, time management, using prior learning and skills, out-of-class learning experiences, and learning by doing, applying and connecting.

Often these students appeared to "defend" the less than perfect study styles and behaviors that they reported with internal attributions to learning style or personality. One student wrote, "When it comes to exams, I usually cram the night before or a few days before the test. I know this isn't the 'correct' way to study, but it has worked out for me. I think this style goes along with my procrastinating nature." Another student, in talking about doing the minimum in a class, wrote "I suppose that strategy of 'satisficing' is normal for college students." Finally, a student commented "…my study style seems to be different than that of some of the other college students. For the most part,…I like to learn things somewhat on my own."

Finally, the three students earning the highest grades in the course and on their senior thesis more often reported, compared to the other students, problematic study habits including being distracted, not doing required readings, always procrastinating, and not working enough with others. In addition, they were more likely to discuss adjusting their study strategies or behaviors in different courses based on material, difficulty level, type of assignments, and/or teacher behaviors.

What is Especially Difficult to Learn and How Do They Learn It?

I also asked my students to think about something that was particularly difficult to learn in their sociology courses, and to talk about what that was and how they attempted to learn that difficult skill or content. This was not something addressed often or in much detail in the logs, despite my direct prompt. Students talked about the difficulty of learning in certain courses especially theory (e.g., classical theorists, abstract ideas) and

senior experience (almost everything!). They also noted specific skills and content from various courses that were particularly difficult to learn such as writing sociologically, using the sociological imagination, applying theory, using SPSS, understanding other religions, and understanding correlations. Some mentioned particular situations, contexts or instructors that were especially problematic for their learning including a course with no structure, a large lecture hall full of distractions, instructors who did not help or teach, and a course that demanded a great deal of time, and required them to remember, connect, and use knowledge and skills from past courses that they had not retained. Several of the students made this latter point. For example, "Senior Experience also proves difficult to me, I think, because of it being a capstone course that has used other courses as building blocks up to it. This is somewhat troubling for me because I have throughout my academic career [found] that it is difficult for me to retain knowledge from each course for long periods of time. I have heard many students talk about this problem."

Most students mentioned only one or two strategies that helped them learn these difficult skills or material, or in these problematic situations. The most commonly mentioned strategies were asking for help from the instructor, TA or peers, doing the reading assignments (especially before class) or taking notes on the readings, and relating the material to ones own life or something relevant and concrete. Thus, these students do not appear to be very reflective about learning when they are struggling, and about what has helped or might help them to deal with such situations.

What Can They Do To Improve Their Learning?

Of the eight students, five offered multiple responses to the probe, "what might you do to increase your learning?" The three students that I would describe as struggling the most (based on inconsistent attendance, failure to regularly use email as required, low overall effort and quality of work in the course, late work, and frequent use of excuses) had nothing substantive to say in response to this question. Two simply ignored it and one wrote, "I really do not have a response to that question."

Frequently mentioned responses from the other students fell into four general categories. Four of the five students who responded indicated they should read more, read more carefully, read optional material, or read assignments before class. Three of the five repeatedly mentioned interpersonal interactions including that they should exchange papers with peers, meet with faculty members, and ask more questions of instructors. One student wrote, "However, this time, to increase my learning I will make myself squeeze in some time to go talk to the professor in person about any concepts or essays that I may be having trouble with." All five who responded mentioned strategies or behaviors having to do with effort. A student highly critical of her study habits wrote, "I could also read a few more of those darn reading assignments and stop procrastinating." "I need to spend more time on my schoolwork…" Students suggested setting priorities, asking for help, using better study habits, spending less time on other activities, increasing their focus, starting assignments earlier, reducing procrastination, getting more sleep, and spreading out their school work as strategies to help with effort and time on task. Finally, four of the students noted that they wished they had participated in one or more out-of-class learning opportunities. In particular, they mentioned AKD, attending scholarly presentations on campus, joining a study group, and finding ways to apply material to their own lives and experiences.

Reflections on the Learning Log

Although I did not ask the students to reflect on the learning log assignment itself, three students did so and wrote generally positive comments about the learning log experience. One student simply noted that she learned quite a bit about her learning. Another wrote, "I think that learning logs are definitely useful as a tool of reflection and a way to analyze my own progress as a student, not to mention the ways professors could use them. Getting 'inside the head' of a student seems like a valuable way to improve understanding and teaching."

In terms of differences in the logs, the A-B students and two others who were doing solid work and were exhibiting moderate to high interest and motivation in the course wrote longer, more detailed discussions of how they study and learn than did the three students I viewed as struggling in terms of interest, participation, motivation, responsibility, and grades. The stronger students' logs ranged in length from 12 to 14 pages, while the logs of the struggling students were 4 to 12 pages. In fact, two of the three struggling students failed to provide even the minimum required six entries. One of the struggling students was unable to focus the log on learning sociology or even learning in college. Rather, the vast majority of her log was about her family life. The stronger students were more self critical, and considered more and more varied factors in their reflection than did the struggling students. The ability and/or willingness of the stronger students to engage in metacognition at more developed levels was apparent in the logs.

Discussion and Conclusions

This small but fairly diverse group of sociology senior majors mention study/learning strategies similar to those found in the focus group study of successful learners, sociology honors students from around the nation (McKinney, 2004) as well as from the interview study of sociology seniors at one institution (McKinney, 2005). These include making connections, finding relevance of the material to their lives, talking with others, and reviewing and writing. In addition, the suggestions my students offered for what they should do to learn better match fairly well with the strategies those honors students report already using to learn such as reading, making interpersonal connections, and increasing time on task.

The strategies discussed by the students also fit current "best practices" in undergraduate education including collaboration with peers, prompt and frequent feedback, interaction with faculty, time on task, establishment of links and connections, and active learning (Chickering & Gamson, 1987; Ewell, 1997). The strategies of making connections and increasing relevance to students' own experiences fit well with the theories and empirical work on placing new learning in the context of students' own experiences and current knowledge base or epistemologies (e.g., Baxter Magolda, 1999; Kegan, 1994; King & Kitchener, 1994). It would appear, then, that other than an emphasis on making material relevant to their own lives, there may be little unique in terms of how students attempt to learn the discipline of sociology. Though limited by the small number of learning logs and the qualitative data, I attempted to look for general similarities or differences in the patterns of responses between subgroups of students who struck me as having different experiences in the course and in the major. The main difference between these two groups of students in this study as noted earlier was in the quality of the learning log itself. Whether these differences simply reflect the fact that the stronger students work harder on all their assignments (including the log) and/or that

they are more able or willing to engage in metacognition (Flavell, 1979), and/or that something about reflection is related to learning or success is not something that can be answered by the data from this study. Some prior research, however, indicates that when engaging in self-assessment (a form of reflection), stronger students are more accurate in that self-assessment (McCourt, Ballantine, & Whittington, 2003). It is also unclear what role, if any, presentation of self or impression management may have played in the learning logs. The logs were confidential but not anonymous. Perhaps stronger students are better at presentation of self and include in their logs the things they think the instructor wants to see. Yet, the three students with the highest grades were actually more critical of their learning than were the other students. It is possible that they assumed this was what I wanted to read about in their logs.

Several of the students expressed recognition of and difficulties with needing to retain learning from past courses and apply it to current and future courses. This topic may have come up because the students were enrolled in Senior Experience/thesis which explicitly draws on their past course work. I do not know if students would make similar comments about retention and integration the semester before they enroll in Senior Experience but it would be useful to find out in future research. If our curriculum is attempting to provide and encourage integrated learning and experiences, this should be transparent to our students and something on which they would likely comment at other points in the major.

Despite five students noting many ideas for improvement in their learning behaviors, only two of the students reported any attempt to change their studying/learning behaviors in the two to three weeks they kept the logs. Both students reported finding these changes helpful to their learning. Perhaps, by the time they are seniors, students are very set in their study habits, making change difficult. It is also possible that reflection for only a two to three week time period was not sufficient to promote changes in their behaviors. Finally, as previously noted, many of the students defended or justified their study strategies in terms of past success, personality, and study style, perhaps seeing no need for change.

I see several areas for the application of these results or potential interventions in my courses and department (see, also, McKinney, Howery, Kain, Strand, & Berheide, 2005). Instructors in other fields and institutions should consider in what ways these implications are relevant to their students as well. Though most instructors will have heard about the importance of many of these interventions previously, they are far from universally accepted or utilized. Thus, being reminded of their importance and their basis in student beliefs is critical. Based on the findings, we need to increase our support to improve students' ability and opportunity to reflect on their learning, to manage and use time well, to persist at difficult tasks, to seek help and collaborate with others, and to increase retention and make connections between prior learning and current courses or tasks. How can we do all this? Interventions are needed at the course and program levels in the department. Departments should consider adding the specific abilities listed above explicitly to department student learning objectives or outcomes. Instructors should take a look at their course learning objectives, and change or add assignments and evaluation methods to strengthen these particular skills and strategies. Evaluation of teaching should include assessment of the extent to which the faculty member facilitates these abilities. Departments can also increase efforts to promote opportunities for their students to improve these skills outside of class (e.g., special sessions for their students held by campus learning centers, use of volunteer peer tutors in the major).

I also offer a few general ideas for interventions at the course level that stem from the students' ideas. To encourage and reward meaningful student reflection, faculty members could require a learning log or journal assignment spanning much of the term, make a reflection paragraph part of all assignments, use classroom assessment techniques, or have class discussion-analyses of assignments after they are completed. Faculty will also need to help students see how such reflection can be used to promote positive changes in learning behaviors.

Student persistence would be facilitated by requiring and giving credit for multiple drafts or rewrites of work and by offering students much greater input and choice in the selection or design of assignments. Using well-designed student teams, facilitating the formation of quality study groups, requiring students to meet with the instructor, and teaching peer review skills all support collaboration. Time management might be improved by offering assignments that fit the rhythm of the semester and the rest of the workload, providing students with some time to work together in class, giving students some choice of due dates, helping students use virtual means to be efficient and to engage in collaboration, encouraging students to take advantage of campus resources on time management, and having reasonable late work policies that fit the culture and are fair but do not enable student mismanagement of time. Finally, retention of and connections among material/skills across and with in courses can be increased with some repetition, appropriate review, assignments that explicitly build on earlier work or actually continue across two or more courses, discussions with students about retention and connections, team teaching, visits of faculty or students from later courses with students in earlier courses, and facilitated discussions about material and learning in the discipline among students at different class levels (e.g., sophomores and seniors).

Of course, to improve retention and connections, faculty will also need to work closely with each other, looking at what goes on in specific courses as well as in the curriculum as a whole. The goals would be to identify how courses can be better integrated, how this can be made clear to students, and how assignments in some courses can explicitly build off those in previous courses. Having a sequenced and connected curriculum and co-curriculum that is visible to the students (e.g., discussed on your department web site, in student orientation sessions or handbooks, by faculty in core courses, and by advisors) is critical. In some departments it would be appropriate to require majors to keep a student portfolio, which would include related assignments they have completed across the curriculum and reflections on their learning over time. In a student orientation or an early course for majors, students could be assigned to analyze the curriculum and to find the connections or suggest places and strategies for increasing integration. Using shared language both in terms of disciplinary jargon and in terms of academic skills across courses and activities is also important for integration. Finally, supporting and requiring quality out-of-class learning opportunities is another strategy to strengthen reflection, persistence, collaboration, connections, and time management. Honors sociology majors noted the importance of making connections between in and out-of-class learning (McKinney, 2004). Sociology students report that managing time is key to participation in these learning opportunities, and a significant positive correlation has been found between engagement in the sociology and participation in out-of-class learning (McKinney, Tchernykh, & Malak, 2004). Such opportunities include, for example, working with faculty members on research projects, attending professional conferences, participation in student disciplinary societies or clubs, attending local scholarly presentations, participating in a department "book club," doing service learning, and engaging in an internship experience. Faculty must work with each other and with

student leaders to increase these opportunities, improve their quality, and reduce the time and other barriers to participation (McKinney, Tchernykh, & Malak, 2004). We have much yet to discover about how sociology majors learn sociology and about how we can use that information to enhance their learning. At this juncture, it appears that sociology majors report learning strategies similar to those supported in the literature on learning in other disciplines and in higher education, in general. These strategies, by and large, are not the best fit with the lecture method, still a common pedagogy in sociology and many other disciplines. We should all ask to what extent we, as instructors, ignore both the literature on teaching and learning, and the voices of our students.

Additional research is needed to clarify the relationship between reflection and learning. Under what circumstances does reflection contribute to changes in student learning attitudes or behaviors? How does reflection contribute to learning? Longitudinal and/or experimental approaches, such as a study where students would be randomly assigned to reflect and self-assess at one point and then be compared on their learning and success in the discipline later in time, will be necessary to determine causal direction and intervening processes. More detailed information on student concerns with and strategies for retaining, integrating, and applying prior knowledge and skills should be a focus of further study. A different perspective could be obtained by looking at learning strategies and styles of majors earlier in their student career and at our "struggling" students. Finally, we also need to replicate the findings here for sociology students at other institutions and for students in related disciplines.

** This research is part of a multi-method project supported by the author's position as Cross Chair in the Scholarship of Teaching and Learning, selection as a 2003-2004 Carnegie Scholar, and a grant from the American Sociological Association Teaching Endowment Fund. The author gratefully acknowledges the contributions of the eight members of her 2003 Senior Experience in Sociology class. Finally, thanks to colleagues Jackie Dewar, Tom Gerschick, Virginia Gill, Mary Huber, Tracey Patton, and Michael Loui for their comments on an earlier draft.*

References

Albaili, M. A. (1997). Differences among low-, average- and high-achieving college students onlLearning and study strategies. *Educational Psychology*, 17, 171-177.

Baxter-Magolda, M. (1999). *Creating contexts for learning and self-authorship*. Nashville: Vanderbilt Press.

Calder, L. (2002, March). Looking for learning in the history survey. *American historical association perspectives*, 40, 43-45.

Case, J. & Gunstone, R. (2002). Metacognitive development as a shift in approach to learning: An in-depth study. *Studies in Higher Education*, 27, 459-470.

Chickering, A. W. & Gamson, Z. F. (1987, June). Principles for good practice in undergraduate education. *The Wingspread Journal*, special insert, 1-16.

Cross, K. P. & Steadman, M. H. (1996). Classroom research: *Implementing the scholarship of teaching and learning*. Jossey-Bass: San Francisco.

Day, S. (1994). Learning in large sociology classes: Journals and attendance. *Teaching*

Sociology, 22, 151-165.

DeLamater, J., Hyde, J. S., & Allgeier, E. R. (1994). Teaching human sexuality: Personalizing the impersonal lecture. *Teaching Sociology*, 22, 309-318.

Dietz, T. (2002). Predictors of success in large enrollment introductory courses… *Teaching Sociology*, 30, 80-88.

Eckstein, R., Schoenike, R., & Delaney, K. (1995). The voice of sociology: Obstacles to teaching and learning the sociological imagination. *Teaching Sociology*, 23, 353-363.

Ewell, P. T. (1997, December). Organizing for learning: A new imperative." *AAHE Bulletin*, 3-5.

Fisher, B. J. (1996). Using journals in the social psychology class: Helping students apply course concepts to life experiences. *Teaching Sociology*, 24, 157-165.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist*, 3, 906-911.

Grauerholz, E. & Copenhaver, S. (1994). When the personal becomes problematic: The ethics of using experiential teaching methods. *Teaching Sociology*, 22, 319-327.

Hattery, A. J. (2003). Sleeping in the box, thinking outside the box: Student reflections on innovative pedagogical tools for teaching about and promoting a greater understanding of social class inequality among undergraduates. *Teaching Sociology*, 31, 412-427.

Hollander, J. A. (2000). Fear journals: A strategy for teaching about the social consequences of gendered violence. *Teaching Sociology*, 28,192-205.

Jacobs, D. (2002). An alternative approach to general chemistry. http://www.carnegiefoundation.org/CASTL/djacobs/index2.htm

Johnson, G. M. (1994). Undergraduate student attrition: A comparison of the characteristics of students who withdraw and students who persist." *The Alberta Journal of Educational Research*, XL, 337-353.

Karcher, B. C. (1988). Sociology and writing across the curriculum: An adaptation of the sociological journal. *Teaching Sociology*, 16, 168-172.

Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, Mass.: Harvard University Press.

King, P. M. & Kitchener, K. S. (1994). *Developing reflective judgment: Understanding and promoting intellectual growth and critical thinking in adolescents and adults*. San Francisco: Jossey-Bass.

Light, R. J. (2001). *Making the most of college: Students speak their minds*. Cambridge, MA: Harvard.

McCourt Larres, P., Ballantine, J., & Whittington, M. (2003). Evaluating the validity of self-assessment: Measuring computer literacy among entry-level undergraduates within accounting degree programs at two UK universities. *Accounting Education*, 12, 97-112.

McKinney, K. (2005). Sociology senior majors' perceptions on learning Sociology: A research note. *Teaching Sociology*. In Press.

McKinney, K. (2004). Learning in Sociology: Successful majors tell their story. *Journal of Scholarship of Teaching and Learning*, 4, 15-24.

McKinney, K., Howery, C. B., Kain, E., Strand, K. J., Berheide, C. W., and members of the task force. 2005. *Liberal Learning and the Sociology Major Updated: Meeting the Challenges of Teaching Sociology in the Twenty-First Century*. Washington, DC: American Sociological Association.

McKinney, K., Tchernykh, M., Fite, K., and Malak, J. 2004. Beyond the classroom: Out-of-class learning in Sociology. *Teaching Sociology*, 32, 1-18.

Nelson, R. (1998). Using a student performance framework to analyze success and failure. *Journal of College Reading and Learning,* 29, 82-89.

Neuman, W. L. (1989). Which students learn the most, and why?: A replication and extension of the Szafran pretest study. *Teaching Sociology*, 17,19-27.

Park, C. (2003). Engaging students in the learning process: The learning journal. *Journal of Geography in Higher Education*, 27,183-199.

Paulsen, M. B. & Gentry, J. A. (1995, Spring/Summer). Motivation, learning strategies, and academic performance: A study of the college finance classroom. *Financial Practice and Education*, 78-89.

Prosser, M., Walker, P., & Millar, R. (1996). Differences in students' perceptions of learning physics. *Physics Education*, 31, 43-48.

Reinertsen, P. S. & Wells, M. C. (1993). Dialogue journals and critical thinking. *Teaching Sociology*, 21, 182-186.

Szafran, R. F. (1986). What do introductory sociology students know and when do they know it?: The results of pretesting students. *Teaching Sociology*, 14, 217-223.

Van Etten, S., Freebern,G., & Pressley, M. (1997). College students' beliefs about exam preparation. *Contemporary Educational Psychology*, 22, 192-212.

Wineburg, S. S. (1991). Historical problem solving: A study of the cognitive processes used in the evaluation of documentary and pictorial evidence. *Journal of Educational Psychology*, 83, 73-87.

Wineburg, S. S. (1992). Probing the depths of students' historical knowledge. *AHA Perspectives*, 30, 1-24.

Yaworski, J., Weber, R., & Ibrahim, N. (2000). What makes students succeed or fail?: The voices of developmental college students. *Journal of College Reading and Learning*, 30, 195-221

Authentic Engagement of Adult Learners in Online Learning

John LeBaron College of Education and Allied Professions Western Carolina University Cullowhee, North Carolina, USA

Ieda Santos Institute of Education The University of Warwick Coventry, England, UK

Abstract

The purpose of this paper is to present activities adopted in two post-secondary course settings to promote peer interaction where the co-authors have been involved in design and teaching or both. Based on our experiences and the results of participant evaluations, we attempt to demonstrate that online learning can be richly challenging, engaging and enjoyable. Participant feedback collected in several settings and over varying time periods suggests that well-designed and executed online learning environments are no less challenging and engaging for adults than their onsite counterparts. The paper describes two online settings, each in a different country, supported by a review of relevant literature. Online activities are analyzed in light of student feedback. The paper concludes with a more general discussion of two particular curricular issues raised in earlier sections, namely the relative scholarly challenge and human interactivity offered to learners in online versus site-based classroom settings.

Overview

Through a description of two diverse instructional activities in computer-networked learning settings for adults, we intend to demonstrate in practical terms that purposeful, interactive student engagement is possible online. By "engagement", we mean purposeful, frequent conversation not only between students and their instructors (one-to-many) but more importantly among the students themselves (many-to-many). This paper is concerned with both types of dialogue. The two learning activities described below are simple in design. Each uses readily available, off-the-shelf server or client applications. In making our case, we discuss the need to design instructional settings that involve students actively in confronting professional issues emerging from their own experiences and needs. Evidence to support our case is derived from participant evaluations of the activities under discussion. Because each of these activities emerges from rather different instructional settings (one American University and one European University), the evidentiary methodologies vary significantly across the two cases.

Activities presented in this paper are drawn from two formal courses. The first is a graduate course, *Theory and Research in Curriculum (TRC)*, offered in the University of Massachusetts Lowell's online masters program in educational administration. The main substantive goal of TRC is for students to examine curricular theory as applied to the realities of practice in leadership and instruction. Such inquiry is conducted in the context of the social, psychological and political milieu for curriculum and schooling. As for process, the course is designed to promote the learners' construction of knowledge and the application of scholarship to the practicalities of schooling in an environment that students find challenging, enjoyable, engaging and highly interactive.

The second course, *Online Communities*, is a graduate course offered by Portugal's University of Aveiro as part of the 2003 Multimedia in Education masters program. The main course objective is for students to examine the philosophical and theoretical foundations of online communities, with a specific focus on learning. The course is guided by a social constructivist approach, which emphasizes ongoing dialogue among all participants, including the instructor. The course is designed to provide students with opportunities to put into practice the concepts discussed within their own context, for example schools. The course not only requires students to be active participants but also places high importance on the socio-emotional aspects of human interaction.

The question of tactical efficacy, however, requires a broader strategic context for discussion. Accordingly, evaluative data are presented and analyzed across four iterations from one of the course settings (US University) for the tactical activities described in the earlier part of this paper. These additional data come from a larger sample size of students who responded to specific questions about the relative human interactivity and academic rigor of their online versus onsite graduate course experiences. Since students were responding generally to several iterations of a course environment designed with features similar to the ones described in detail, we suggest that a reasonable conceptual link exists between the case-by-case evaluations of the detailed activities and the more general results reported over time by learners on the larger questions of human interactivity and academic rigor. Although these two factors are separate, if we accept the notion that the quality of academic production emerges significantly from purposeful social interaction, we can make a case that the two factors are associated. We do not, however, present this paper as proof of such a relationship.

Along with the broader questions raised about the relative efficacy of online versus onsite coursework, the activities presented in this paper are supported by evaluative data solicited anonymously from students in the form of scaled and narrative responses. Students submitted their responses either through Web-based forms or paper-and-pencil surveys. Although such data gathering generates indicators leading to plausible conclusions in particular settings, it is not presented here as definitive research. To the course designers, however, the data are sufficiently compelling to be used to guide future practice and course design. As such, we believe that the results may contribute to field's ongoing discussion of online learning efficacy.

Literature Review

Human interaction has been considered as crucial to the success of all forms of education (Laurillard, 2000; Swan, 2002; Vrasidas & McIsaac, 1999). Computer mediated communication (CMC) allows for many different kinds of interactions including one-to-one, one-to-many, or many-to-many interaction. Yet, by itself technology does not promote interaction. Harasim (1993) stresses that technology requires human intervention in shaping and nurturing interactions in online environments. Roblyer and Wiencke (2003) add that activities must be planned to encourage and support interaction among course participants. Barab et al (2004) and Stepich and Ertmer (2003), for example, implemented a number of design steps and procedures in their online courses with the purpose of fostering opportunities for collaboration as well as a sense of connection and membership among participants in computer networked settings.

Barab et al (2004) also determined that the affective issues of trust and intimacy were crucial to the substantive engagement of participants in educational dialogue. Lock (2002) and Haythornthwaite et al (2000) affirm that if an atmosphere of safety and trust is not promoted in the course, overall participant contribution to the dialogue will be compromised. Additionally, Hill et al (2001) have suggested that the use of group work contributes positively to a sense of belonging and connection within the course, indicating also that reminders sent by the instructor once or twice a week about the regular tasks not only helped students to keep track of the activities but also assured them that the instructor was present and available to them. LeBaron and Miller (2004) also outline several additional activities designed to promote human interaction and social knowledge construction within the course membership. Among these is an "icebreaker" exercise through which students submit online biographical information about their personal and professional interests along with a pressing question they hope the course will help answer. Moreover, focusing specifically on the social aspects of the interaction, Woods and Ebersole (2003) researched the usefulness of personal folders or non-subject matter discussion boards in an online course. They discovered that the use of autobiographies helped foster positive relationships within the course community: students and instructor alike.

Countless methodological variations exist in site-based and online learning environments, making "this or that" value judgments between two poles questionable at best. Departing from the "no significant difference" comparisons based on such criteria as student grade comparisons (Russell, 1999), more recent research on the relative effectiveness of online learning has become more naturalistically descriptive. In the 1990s, Green (1999) observed that transmissive (versus constructive) pedagogy continued to dominate collegiate teaching online, and that research on the relative efficacy of online versus site-based learning was inconclusive. McDonald (2002), Ehrmann (1995) and LeBaron and Tello (1998) suggest that contemporary research has failed to address deep, substantive questions about online practice. In research reported by the Institute for Higher Education Policy (2000) on the effectiveness of post-secondary online education, the majority of examples selected for analysis were quantitative or correlational. Relatively few qualitative, naturalistic accounts had yet become available.

More recent reports of actual online educational practice descriptively portray an increasingly positive image of its potential to offer rich learning experiences. Koory (2003) affirms that her online version of an Introduction to Shakespeare course consistently produced superior learner outcomes than did the traditional version of the same course. Similar to Moore's (1993) suggestion more than a decade ago, Koory believes that certain courses are particularly well suited to the unique communications capabilities of online learning management systems that promote diverse modes of knowledge construction (one alone, one-to-one, one-to-many, and many-to-many). She allows that the better outcomes generated in the online version of her course may, in part, be attributable to the self-selection of online students whom she characterizes as "often the 'very models' of ... an adult learner -- experienced, self-directive, task-oriented, interested in problem-solving and immediate application" (p.19).

Based on in-depth surveys of twenty-one post-secondary faculty at various American locations, Smith, Ferguson and Caris (2001) conclude that, notwithstanding certain limitations, online courses can provide rigorous intellectual challenges that promote deeper student thinking, and greater political equality between learners and their

professors. Drawing on thirty years of post-secondary sociology teaching, Kassop (2003) offers ten reasons why online education equals or exceeds the quality of onsite teaching. Among these reasons are: the capacity for student centered activity, promotion of deep peer discussion, the provision of on-demand resources and services, immediate instructor feedback, and the opportunity for faculty rejuvenation.

Wilson (2002) compares student performance and satisfaction in an onsite versus online computer science course. Among other things, she found that students in the online course used computer networked resources "substantially more" than their onsite counterparts. She found that her online students appreciated the flexibility offered in this mode. Meyer (2003) presents evidence that threaded online discussions are particularly well-suited to promote higher-order thinking, student reflection, and "time-on-course-task" among students in two graduate-level education courses. Infusing media streaming in conjunction with SMART board technology into her undergraduate biology courses, Michelich (2002) offers anecdotal evidence of student class participation, appreciation of the video streams for content understanding, and improved performance on assignments and exams.

The evidence presented above suggests that computer networked learning environments can be richly engaging, challenging, interactive and enjoyable. Although the question of whether online learning can match classroom settings for interactivity or rigor remains unanswered, the importance of thoughtful, purposeful instructional design and execution emerges time and again in the literature. This suggests that the more important practical question should focus on actual tactics to promote instructional process goals, regardless of the course delivery mechanism, rather than the issue of comparative efficacy pitting online against onsite education.

Two Online Educational Activities

A major purpose of this paper is to present details of two additional learning activities designed to promote the peer construction of knowledge and to create connections between dry theoretical content and contemporary issues of policy and practice.

The Resource Treasure Hunt Jones et al. (1994) describe indicators of engaged learning including "vision", where students are enabled to take responsibility for their own learning, self-regulate the learning process, and define their own learning goals. Learning tasks should be appropriately challenging, authentic, and multi-disciplinary to promote learner engagement. By presenting learners with meaningful problems that they would want to solve, they will be motivated to work through the problems and are more likely to perceive their problem-solving efforts as worthwhile (Jones, 1999). In an effort to promote original student research on major course themes, to promote peer knowledge construction, and to service urgent questions posed from within the student body, the fall 2003 version of U Mass Lowell's Theory and Research in Curriculum course launched a new assignment, the Resource Treasure Hunt. This activity was inspired by the work of Bernie Dodge and Tom March of San Diego State University who pioneered the very popular WebQuest protocols for student research (Dodge, 1997).

For this assignment, resources were researched, organized and presented in the form of a computer network "treasure hunt." In the biographical information supplied by students online at the beginning of the semester and posted in an expanded class list of student

biographies, each student described a course-related educational question for which networked resources might be searched, sifted, evaluated and applied to the solution of the problem. One such question was: "I would like to measure the success of constructivist mathematics approaches to instruction of at-risk urban students". Based on the questions submitted with the original student data form, the instructor tried to match each student with a peer, pairing questions with students of similar interest so that the treasure hunt might benefit the researcher as well as the client.

To fulfill this assignment requirement, students were asked to develop their resource packages gradually throughout the semester, occasionally checking back with their "clients" to verify if they were on track, and to allow clients to refine their questions. Two-member teams were set up within the course platform utilities to facilitate all assignment-related communication. In their teams, students conducted research for the same partner who followed up on their research question. Hence all students were mutually accountable to their partners. After the assignment deadline, each student's work was linked from an open course page accessible to the entire class. The title page of one such project appears in Figure 1.

The following outline for executing this module is presented as a guide, not a blueprint for practice. Faculty who are responsible for designing and executing course curriculum are encouraged to augment this model to meet their specific curriculum and institutional needs. Each component of the model includes a set of tasks as well as recommended time frames upon which to be completed.

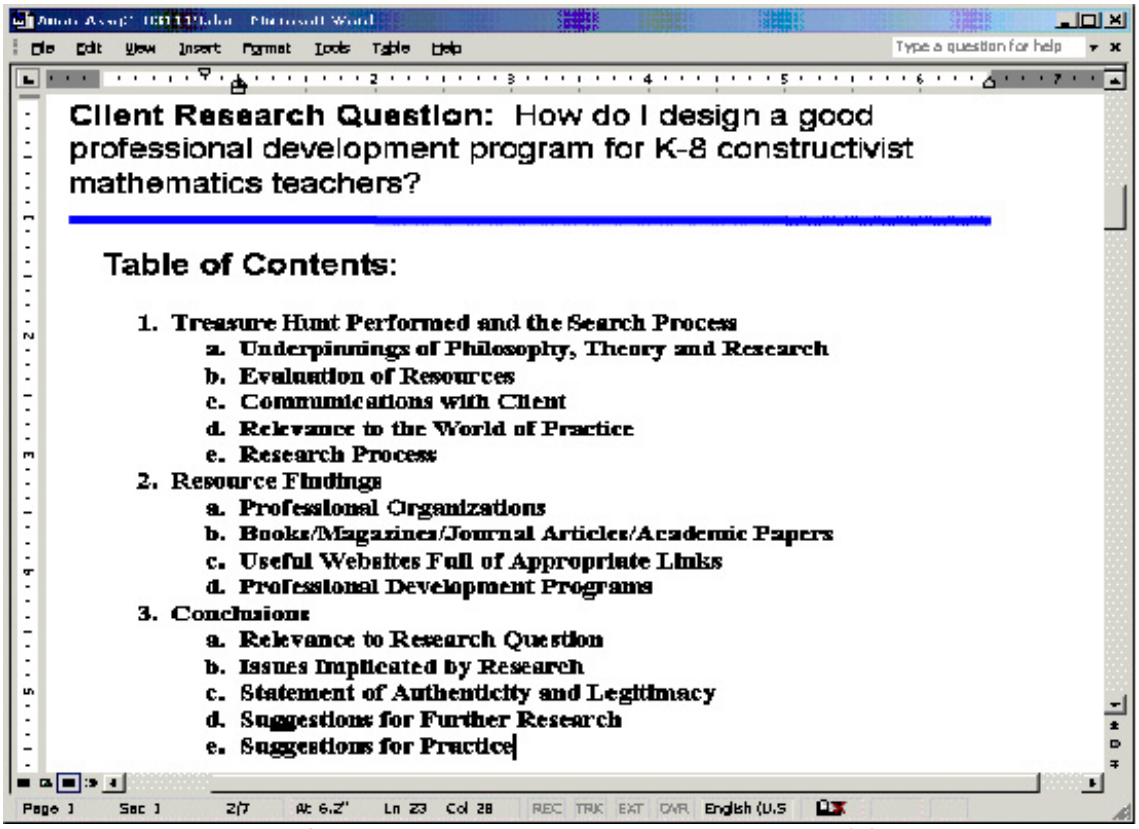


Figure 1 - Student Res ource Treasure Hunt Table of Contents

The online evaluation results from a small sample of ten students responding to questions about this assignment were generally positive. With 80% students agreeing, 10% disagreeing and only 10% neutral, the assignment appears to have met its goal of promoting student research skill on peer-posed questions related to the course content. To a lesser yet still positive degree (60% agreeing, 10% disagreeing and 30% neutral) students signaled that they benefited from their peers' research. They also seemed inclined to use their partners' research results in their own future professional work (50% agreeing, 10% disagreeing and 40% neutral). Ninety percent of the responding students recommended retaining this activity in the future; only 10% advised not doing so. However, the assignment failed to promote the sense of peer "connectedness" that it was intended to create (30% agreeing, 20% neutral and 50% disagreeing). Ideas to remedy this shortcoming are presented below.

Open-ended student comments on the assignment shed more light on its strengths and weaknesses. Two students explicitly stated that the client-consultant nature of the project particularly helped them hone their own research skills. Yet others suggested that a clearer description of the particular research tools recommended (e.g., various ERIC tools, the University's e-library database) would have promoted their speed and productivity in completing the assignment. Issues identified with respect to this assignment included the lack of student choice about whether or not to do it instead of a more traditional, independent assignment, and who the instructor-assigned researcher/client partners would be. This is not surprising. Cordova and Lepper (1996) have found that student motivation increases with contextualization, personalization, and choice. Similarly, Iyengar and Lepper (1999) have found that providing students with choices increases intrinsic motivation and results in greater persistence, better performance and higher levels of satisfaction with their educational experience.

Therefore, future course versions may retain this assignment, but as an option versus another equally demanding independent assignment that students can complete individually. Future resource treasure hunts may also require that students select their own partners for this client/consultant undertaking rather than leaving this choice to the instructor.

"Coffee with Letters" and Course Group Work In an attempt to promote trust, belonging and group cohesion among participants in the Online Communities course at the University of Aveiro, all participants were invited to contribute to the ongoing socialization activities. Two such activities are described below. Social interaction is the foundation for trust building among members of a course (Wang et al, 2003) and can directly encourage instructional interaction (Gilbert & Moore, 1998). Harasim et al (1995) affirm that social communication is a crucial component of a course activity. Accordingly, we suggest that online environments should provide "space" for students to socialize.

The objective of the Coffee with Letters was to have an informal place where participants would visit and "talk" about anything they pleased, except for course content. The nationality of participants was Portuguese. Portuguese cafés are places where people frequently stop by, have a cup of coffee and chat. The creation of a virtual Coffee with Letters forum was influenced by this culture. It was carefully designed as a virtual reflection of the real Portuguese café. Therefore, only the first activity was structured by the instructor in order to provide students with basic guidelines and to get them started. Students were expected to take over the activity gradually, though the instructor remained an active participant in the virtual café. Participation in this activity was not

compulsory but it was highly recommended.

Students were invited to submit an evaluation at the end of the course. Out of thirty students enrolled in the course, twenty-six returned an evaluative questionnaire. Student perceptions of the social activities were quite positive. Many agreed that the Coffee with Letters forum and its attendant sense of community was their favorite aspect of the course. Open ended comments such as "Thank you for helping creating a sense of community among the students" and "Keep up the good work" support the proposition that students perceived a sense of community to have been created by this activity. Some students even suggested that this kind of activity should be implemented in other university courses. The majority (96%) pointed out that they perceived themselves to be members of a group, and all students agreed that they felt welcome in the course. A closer analysis of the messages suggested that students discussed a variety of topics, ranging from football (soccer) games, sharing pictures, congratulating someone, and exchanging jokes.

Concurrent with the ongoing social nature of Coffee with Letters, students were asked to work in groups in order to develop a final course project. They were allowed to choose project topics according to their own professional interests. Due to the nature of the project, students were highly encouraged to work in groups instead of individually. Each group was assigned a private forum in the online environment, to which the instructor also had access. In order to avoid group segregation within the course, a main forum was created to keep the whole group united. While the instructor kept a close eye on each group's activities, the main forum was organized to have students reflecting on many aspects the project, discuss important concepts as well as post updates and announcements. Each week, the instructor started a new discussion in the main forum. The topics for discussion were based on the instructor's observations of the groups' activities. Students themselves started posting resources, debating the principal concepts and suggesting structures for their final projects.

The course evaluation suggests that 92% interacted with their peers from other groups in the main forum. All students agreed that the activities developed in groups contributed to individual learning as well as to getting to know their peers better. Most of the students (96%) reported that the discussion in the forums helped them to reflect on the topics being studied. Others (89%) agreed they received useful feedback from peers regarding questions/or comments sent to the forum. A significant percentage (85%) reported that their knowledge about the course had improved substantially. All students agreed that the activities helped them to combine the course content with their own professional interests.

The evaluation shows that almost 2000 messages were exchanged among the thirty students participating in the course (more than sixty-four messages, on average, per student). Of these, 300 were exchanged in the virtual café. The results show that 88% of the students accessed the course several times a day. A strong majority (81%) also used the discussion groups many times a day. All students reported interacting with the instructor. By the same token, all also agreed that the instructor was easy to contact, encouraged participation and provided prompt feedback.

Academic Rigor and Human Interactivity: Online vs. Onsite

Are tactical online learning innovations such as the ones described above related in any way to perceptions of human interactivity or a sense of academic rigor among adult learners? Questions about these perceptions were posed directly in the online student evaluations of Theory and Research in Curriculum course. Results are shown over four course iterations, as tactical innovations were progressively incorporated into the course. Accordingly, we have a more robust subject sample (N=54) than the number presented for any of the discrete activities discussed earlier in this paper. All of the responding students were mature educators, each having had a rich background of prior onsite courses in their scholarly backgrounds.

Student responses on the question addressing the academic rigor of TRC online are conclusive. We posed the question "How challenging did you find the online learning exemplified in this course in comparison to traditional classroom courses?" Aggregating these data across the four measured course iterations, Figure 2 shows that 96% of the students rated the online course more than or equally as challenging as their experiences in site-based courses. Of course, several different factors can make a university course seem more or less challenging. Since the question did not specifically refer to scholarly rigor, we might presume that certain non-academic factors such as mastering technology protocols and maintaining the discipline to log in regularly contributed to the students' perception of "challenge". In the four course iterations leading up to fall 2003, however, ever greater proportions of participants indicated prior experience with online learning (and hence, prior mastery of the networked technology learning curve), without a significant drop-off in their perception of relative rigor. Contrary to conventional wisdom (National Public Radio, 2000), therefore, it is reasonable to suggest that students found their online course scholarship considerably more challenging than they had found equivalent onsite courses.

On the question of human interactivity, data show more marginally positive results. Again as shown in Figure 2, across the four measured semesters 61% of the responding students held Theory and Research in Curriculum to be more or equally human interactive compared to their site-based experiences. While these survey results show promising evidence of student satisfaction with the interactivity they found in these online courses, we recognize that judgments of "interactivity" can be rather subjective. What one learner values as high-quality interaction might fail to meet the needs of another. Open-ended student comments reinforce the ambiguity of their scaled evaluations. In a single course evaluation, for example, one student lauded "the lively interaction between professor, teaching assistant, and students", while another "missed the human interaction with the instructor". In another example, one student affirmed "the openness of classmates; [s/he] felt the group was more frank in the online environment". Another student, however, lamented the "lack of peer interaction [that s/he] might have ... during a face-to-face course". This disparity in student opinion about human interaction suggests the value of variety in communication methods; the importance of enthusiastic, on-going instructor facilitation (both for instructor-student interaction and peer-peer interaction); and creativity in the design and delivery of computer networked courses.

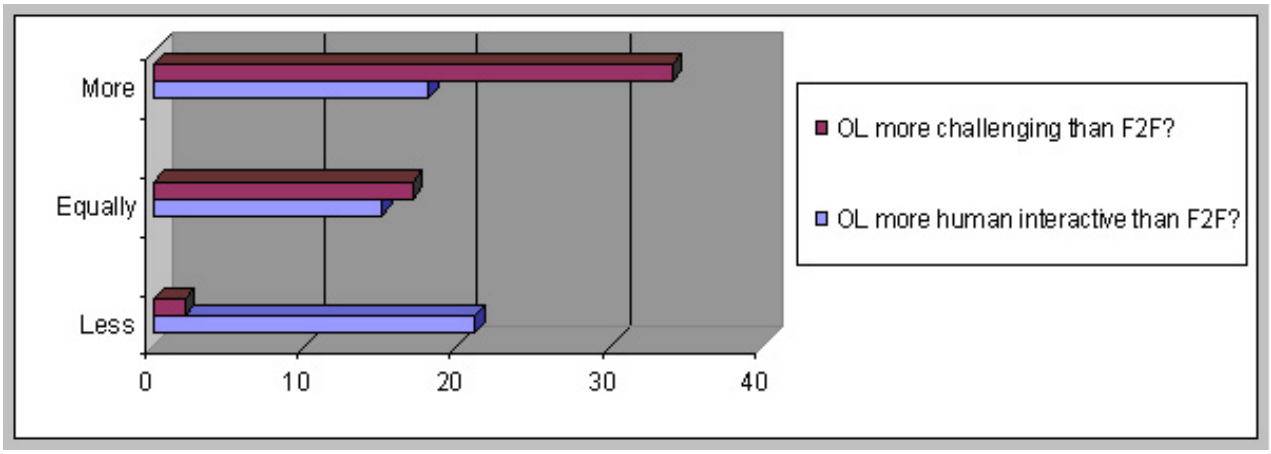


Figure 2 - Online vs. onsite "challenge" and "interactivity", four semesters: N=54

Additional Indications from Field Practice

The authors represent several decades of successful post-secondary teaching in online and onsite settings. Although attribution of student engagement and work quality solely to the type of course delivery mode may be specious, we can agree that the general quality of student output in online settings, at the very worst, equals that produced in site-based environments. Indeed some of the work generated online could not be produced onsite. As a case in point, the research treasure hunt described above depended critically on networked computing for its execution. Even in a site-based course, this activity would require blended online components for completion.

Additional illustrations of network-enabled student production appear in other publications by the authors of this article. For example, a three-week, continuous online jigsaw role-play is described by LeBaron (2004). Although jigsaw role-plays are often carried out in traditional onsite classrooms, their interactive depth is severely constrained by relatively short, truncated classroom sessions. When students are not physically gathered in the same location, they cannot "play", Asynchronous online settings, on the other hand, encourage "playing" on a 24/7 basis, resulting in deeper, more frequent student interaction.

LeBaron and Miller (2004) describe other socially constructivist online activities such as:

- a beginning-of-course "icebreaker" assignment that promotes rich peer awareness and supports subsequent scholarly activity,
- an interactive, online forms-based project organizer, and
- course-embedded audio and video tools to facilitate synchronous and asynchronous communication.

Although each of these activities generated positive student responses on scaled course evaluations, are we able to declare that they are "better" than their site based counterparts? We cannot, mainly because there are no precise counterparts. With appropriate designs, different delivery media generate procedurally different activities. We can say, however, that from our experiences as teachers in multiple delivery

settings, online settings enable student production at least as engaging and effective as work generated in classroom settings.

Concluding Discussion

Twigg (1998) joins a chorus of observers claiming that ultimate victory in education's intensifying competition for students will depend on the relative quality of teaching and instructional design, irrespective of delivery mode. She describes a universe where learners have increasing options to choose the learning experiences that suit their needs. In such a world, Twigg suggests, only the best learning experiences offered at attractive prices will survive sharp market competition. Ely (1996) declares that the adoption of distance education should be driven by carefully assessed educational needs. Effective online instructional designs require transformed measures to capitalize on the unique capacities of networked educational computing. The simple replication of time-tested, transmissive classroom teaching methods will simply not suffice.

If we accept the premise that students learn from their successful confrontations with demanding challenges, our data strongly suggest that, if anything, online course environments more effectively promote student learning than onsite iterations of the same kind of course. In making this statement, we realize that several uncontrolled variables remain and that, by themselves, the survey data do not produce definitive conclusions. Nonetheless, we can declare confidently that the quality of assigned work, combined with the richness of student-student, and student-instructor interaction in the asynchronous discussion boards and the synchronous chats, equaled or surpassed their equivalents produced in the classroom-bound versions of similar courses. The data presented in this paper counter the argument that online environments are deficient in promoting effective learning when compared to site-based teaching.

Our experience supports the perspectives of such observers as Kassop (2003), Koory (2003), McDonald (2002), Meyer (2003) and others that debate over the relative worth of online versus onsite post-secondary teaching may miss the point of meaningful conversation about the efficacy of computer networked learning. Efficacy depends on the degree to which instructional purposes are well articulated, and to which the unique capabilities of all settings, online or site-based, are optimized to realize these purposes for the best possible learner outcomes. The comparative delivery/distribution mechanisms matter much less than how the instructional team manages the environment before, during and after students invest their valuable time, energy and money.

References

Barab, S. A., Baek, E., Schatz, S., Schecler, R., Moore, J., and Job-Sluder, K., 2002. Illuminating the braids of change in a web-supported community: A design experiment by any other name. Manuscript. Retrieved February 02, 2004, from http://gse.gmu.edu/research/de/barab_DBR.pdf Cordova, D.I. and Lepper, M.R., 1996. Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization and choice. *Journal of Educational Psychology*, **88** 4, pp. 715-730 Dodge, B., 1997. *Some thoughts about WebQuests*. Retrieved January 17, 2004, from http://edweb.sdsu.edu/courses/edtec596/about_webquests.html Ehrmann, S., 1995, March/April. Asking the right questions: What does research tell us about

technology and higher learning? Change, **17** 2, pp. 20-27. Retrieved August 26 2001, from http://www.georgetown.edu/crossroads/guide/ehrmann.html Ely, D.P., 1996. Distance education: By design or default? In: Proceedings *Conference of the Association for Educational Communications and Technology* (p. 12). Tallahassee, FL. ERIC Document ED396715 Gilbert, L. and Moore, D.R., 1998. Building interactivity into web courses: Tools for social and instructional interaction. Educational Technology, **38** 3, pp. 29-35

Green, K.C., 1999. High tech vs. high touch: The potential promise and probable limits of technology-based education and training on campuses. In: *Competence without Credentials* workshop. National Institute on Postsecondary Education, Libraries, and Lifelong Learning (PLLI), U.S. Department of Education. Retrieved September 3, 2001, from http://www.ed.gov/pubs/Competence/section4.html Harasim, L., 1993. Networlds: Networks as social space. In: L. Harasim, L. (Ed). *Global networks: Computers and international communication* (pp. 15-34). MIT Press, Cambridge, MA

Harasim, L., Hiltz, S.R., Teles, L. and Turroff, M., 1995. *Learning networks: A field guide to teaching and learning online*. MIT Press, Cambridge, MA

Haythornthwaite, C., Kazmer, M. and Robins, J., 2000. Community development among distance learners: Temporal and technological dimensions. *Journal of Computer Mediated Communication*, **6** 1. Retrieved December 20, 2003, from http://www.ascusc.org/jcmc/vol6/issue1/haythornthwaite.html

Hill, J. R., Han, S. and Raven, A., 2001, November. Build it and they will stay: A research based model for creating community in web based learning environments. In: *Proceedings: National Convention of the Association for Educational Communication and Technology* (pp. 192-199). Atlanta, Georgia

Institute for Higher Education Policy, 2000. *Quality on the line: Benchmarks for success in Internet-based distance education*. Retrieved January 25, 2004 from http://www.ihep.com/Pubs/PDF/Quality.pdf

Iyengar, S.S., Sheena S. and Lepper, M.R., 1999. Rethinking the value of choice: A Cultural perspective on intrinsic motivation. *Journal of Personality & Social Psychology*. **76** 3, pp. 349-366

Jones, B., Valdez, G., Nowakowski, J., and Rasmussen, C., 1994. *Designing learning and technology for educational reform*. Oak Brook, IL: North Central Regional Educational Laboratory (NCREL)

Jones, M.G., 1999. What can we learn from computer games: Strategies for learner involvement. In: Proceedings of *Association for Educational Communications and Technology*, Houston, TX. 7 pp. Retrieved October 10, 2004 from http://www.eric.ed.gov/ERICWebPortal/Home.portal?_nfpb=true&_pageLabel=RecordDetails&_urlType=action&objectId=0900000b8008fb9f

Kassop, M.., 2003, May/June. Ten ways online education matches, or surpasses, face-to-face teaching. *The Technology Source*. Retrieved January 20, 2004, from http://ts.mivu.org/default.asp?show=article&id=1059

Koory, M.A., 2003. Differences in learning outcomes for the online and F2F versions of

"an introduction to Shakespeare." *Journal of Asynchronous Learning Networks* **7** 2, pp. 18-35. Retrieved January 18, 2004, from http://www.aln.org/publications/jaln/v7n2/pdf/v7n2_koory.pdf

Laurillard, D., 2000. New technologies, students and the curriculum. The impact of communication and information technology on Higher Education. In: Scott, P. (Ed.). *Higher Education re-formed* (pp. 133-153). Falmer Press, London

LeBaron, J., 2004. The great debate: Online vs F2F learning. In: Zimmerman, I.K. and Koufman-Frederick, A. (Ed), *Mission Possible: Reaching All Learners with Technology* (pp 92-99). Massachusetts Association for Supervision and Curriculum Development, Wellesley, MA.

LeBaron, J. and Miller D., 2004. The teacher as agent provocateur: Strategies to promote community in online course settings. In: Latomaa T., Pohjonen J., Pulkkinen J., and Ruotsalainen, M., (Eds.). *eReflections - Ten years of educational technology studies at the University of Oulu. Essays contributed by the network builders* (pp. 109-126). University of Oulu, Oulu, Finland. Retrieved January 11, 2005, from http://herkules.oulu.fi/isbn9514276329/

LeBaron, J.F. and Tello, S.F., 1998. Evaluating the effectiveness of distance education: What should we be asking? *Knowledge Quest*, **26** 3

Lock, J.V., 2002. *Laying the groundwork for the development of learning communities within online courses*. Retrieved December 10, 2003, from http://www.ucalgary.ca/~lrussell/lock.html

McDonald, J., 2002. Is "as good as face-to-face as" good as it gets? *Journal of Asynchronous Learning Networks*, **6** 2, pp. 10-23. Retrieved January 20, from http://www.aln.org/publications/jaln/v6n2/pdf/v6n2_macdonald.pdf

Meyer, K.A., 2003. Face-to-Face versus threaded discussions: The role of time and higher-order thinking. *Journal of Asynchronous Learning Networks*, **7** 3, pp. 55-65. Retrieved January 19, 2004, from http://www.aln.org/publications/jaln/v7n3/pdf/v7n3_meyer.pdf

Michelich, V., 2002, January/February. Streaming media to enhance teaching and improve learning. *The Technology Source*. Retrieved January 20, 2004 , from http://ts.mivu.org/default.asp?show=article&id=941

Moore, M., 1993. Three types of interaction. In: Harry, K., Keegan, D., and Magnus, J. (Eds.) *Distance Education: New Perspectives* (pp. 19-24). Routledge, London

National Public Radio, 2000. *Morning edition radio report*. December. Retrieved December 6, 2000 from http://news.npr.org/newsNow.jhtml?groupNews=4&audioNews=59 (inactive)

Roblyer, M.D. and Wiencke, W.R., 2003. Design and use of a rubric to assess and encourage interactive qualities in distance courses. *The American Journal of Distance Education*, **17** 2, pp. 77-98

Russell, T.L., 1999. *The no significant difference phenomenon: A comparative research*

annotated bibliography for distance education. Office of Instructional Telecommunications, North Carolina State University, Raleigh, NC

Smith, G.G., Ferguson, D., and Caris, M., 2001. Teaching college courses online versus face-to-face. *T.H.E. Journal Online*. Retrieved January 21, 2004, from http://www.thejournal.com/magazine/vault/A3407.cfm

Stepich, D. A. and Ertmer, P. A., 2003, September/October. Building community as a critical element of online course design. *Educational Technology*, **43** 5, pp. 33-43

Swan, K, 2002. Building learning Communities in online Courses: The importance of interaction. *Education, Communication and Information*, **2** 1, pp. 23-49

Twigg, C., 1998, May. A regulated monopoly enterprise gives way to competition. *AAHE Bulletin*. Retrieved November 12, 2000, from http://edworkforce.house.gov/hearings/108th/21st/afford71003/twigg.htm

Vrasidas, C. and McIsaac, M.S., 1999. Factors influencing interaction in an online course. *The American Journal of Distance Education*, **13** 3, pp 22-35

Wang, M., Sierra, C. and Folger, T., 2003. Building a dynamic online learning community among adult learners. *Education Media International*, **49** 1-2, pp. 49-61

Wilson, C., 2002, February. A tale of two classes. *Educause Quarterly*, **72**. Retrieved January 25, 2004, from http://www.educause.edu/ir/library/pdf/eqm02212.pdf

Woods, R. and Ebersole, S., 2003. Using non-subject matter specific discussion boards to build connectedness in online learning. *The American Journal of Distance Education*, **17** 2, pp- 99-118

Acknowledgments *The effective design and execution of online learning environments depend critically on good faculty development and support. At the University of Massachusetts Lowell, such support is generously and capably provided by the Division of Continuing Studies and Corporate Education staff. We thank our students for their perspectives and for their efforts as active members in online learning communities.*

Learning About Learning Styles: Can It Improve Engineering Education?

Julie Mills
School of Natural and Built Environments
University of South Australia
Adelaide, South Australia

Mary Ayre
Centre for Lifelong Learning,
University of Glamorgan
Pontypridd, Wales, United Kingdom

David Hands
Submarine Corporation, formerly from School of Advanced Manufacturing and Mechanical Engineering
University of South Australia
Adelaide, South Australia

Pam Carden
Centre for Research in Education, Equity and Work
University of South Australia
Adelaide, South Australia

Abstract

Individuals vary in the ways they prefer to receive, process and demonstrate their knowledge. Research suggests that mismatches between lecturers' expectations of the way students learn and students' own individual preferred learning styles lead to students' lack of motivation and interest, and may cause attrition. This paper describes how a teaching project at the University of South Australia aimed to achieve improvements in student satisfaction by redesigning approaches to teaching, learning and assessment of engineering courses to accommodate a range of learning styles.

Introduction

The Learning Styles project at the University of South Australia commenced in 2001 with a teaching and learning grant awarded to two of the authors. Whilst much of the professional development work and data collection in the project was completed in the first two years, the major achievement of the project has been the embedding of "Learning about Learning Styles" within the engineering programs. The project encompassed the three Departments of Engineering: Advanced Manufacturing and Mechanical Engineering, Electrical and Information Engineering, and Geoscience, Minerals, and Civil Engineering. The project had a teaching and learning focus, rather than research, with the primary aim of improving student and staff knowledge of individual learning styles and through this to increase understanding and improve satisfaction with teaching and learning across the three Departments. Improvement focused on widening the range of teaching, learning and assessment strategies currently

employed in recognition of the variety of learning styles present in classes of diverse students. This follows research findings that engineering students' motivation and success can be adversely affected if their learning styles, and the learning styles of the staff teaching them, are not taken into account (University of Western Australia, 1996; Felder, 1996).

Research on learning styles suggests that in engineering courses, learning is optimised by the application of different learning styles to these courses. Yet most engineering lecturers assume not only that all students adopt (or should adopt) a uniform learning style, they expect the same learning style to be applied to all areas of engineering studies (Felder, 1993, 1996; Holt & Solomon, 1996). This project set out to encourage engineering faculty to challenge these assumptions.

The project was developed with an 18-month implementation timeline and had two main aims. Firstly, the project team planned to foster an understanding of the variations in learning styles amongst students whilst presenting them with methods for coping with differences between learning and teaching styles. Secondly, the project aimed to raise awareness amongst teaching faculty of the variations in learning styles of their students, of the potential differences between their teaching methods and the learning styles of the students, and strategies to overcome these differences. The team was careful to point out that there was no expectation that differences would be catered to on an individual basis. Rather, the expectation was that faculty and students would be aware that differences exist, that not all styles could be catered to all the time, but that all styles could be catered to for some of the time.

Learning Styles

The term 'learning styles' refers to the ways individuals and members of cultural groups prefer to receive, process and present information and ideas. Some people, for example, find it easier to understand a new concept by reading a textbook, whilst others prefer a pictorial explanation. Likewise, people may vary in how they most effectively demonstrate their understanding: graphically, verbally, or in writing. David Kolb (1984), one of the main classifiers of learning styles, identified the four basic learning styles as: convergent (good at problem solving, decision making, and the practical application of ideas); divergent (good imaginative ability and awareness of meaning and values); assimilative (good at inductive reasoning and creating theoretical models); accommodative (efficient in carrying out plans and like getting involved in new experiences). He found that engineers usually have a convergent learning style.

There is some debate about the main influences on learning styles, with some authors (Felder, 1996; Kolb, 1984; Briggs-Myers, 1989) seeing the main influences as personality, life experiences, and the purpose of the learning. Others (Ballard & Clanchy, 1997) identify a particular set of life experiences: the expectations of teachers, as the dominant influence on learning styles.

Whatever the causes of differences in learning styles, there is considerable evidence of disadvantage to students arising from a mismatch between lecturers' expectations of the way students learn, and students' own individual preferred learning styles. Research suggests that these mismatches in learning styles lead to lack of motivation and interest in students, affecting students' success, and causing attrition (University of Western

Australia, 1996; Felder, 1996; Zywno & Waalen, 2001).

Other authors (Anderson, 1991; Beyer, 1993; Harding, 1996) have looked at gender and cultural influences on learning styles, and at differences between the learning styles of mature-age and younger students. Knowledge of these gender and cultural differences are important both for equity reasons, and to support the academic welfare of international students. However, it is acknowledged that the whole field of learning styles is viewed as somewhat controversial. There are two reasons for this controversy: firstly, the danger of stereotyping - assuming that all women, or all international students, for example, will have the same learning styles. Secondly, the fear that learning methods that differ from those of the dominant majority may be viewed by some faculty (and some students) as less valid, or less effective than those favoured by the dominant group. Despite these reservations the evidence of improved student learning and satisfaction resulting from consideration of differences in learning styles was, in our view, sufficiently compelling to recommend this approach to improve teaching and learning.

Learning Styles and Engineering Education Holt and Solomon (1996) point out that because engineering education relies so heavily on problem solving and engineering science (Kolb's convergent and assimilative learning styles), it tends to exclude divergent and accommodative learners from effective learning. Worryingly, it also limits the opportunities of all learners to develop the skills required for proficiency in two other key areas of engineering: design and invention (requiring a divergent approach), and business management (requiring accommodative skills).

US academic engineers Felder and Silverman (1988) sum up the situation as follows: Learning styles of most engineering students and teaching styles of most engineering professors are incompatible in several dimensions. Many or most engineering students are visual, sensing, inductive, and active and some of the most creative students are global; most engineering education is auditory, abstract (intuitive), deductive, passive, and sequential. These mismatches lead to poor student performance, professorial frustration, and a loss to society of many potentially excellent engineers.

An alternative to Kolb's system for identifying learning styles is the Myers-Briggs Type Personality Indicator (Briggs-Myers, 1989), which relates particular types of learning styles to personality types. This system categorises personality on four scales, giving rise to the identification of 16 personality 'types'. A study by Kramer-Koehler, Tooney and Beke (1995) used the Myers-Briggs test in two consecutive years to assess the learning styles of all first-year (about 200) engineering students at a New York university, and found that only 16% of the class had the 'typical' engineering personality profile of ISTJ (Introvert, Sensors, Thinkers, Judgers). On the basis of the class learning styles profile identified, a new core curriculum was designed which introduced engineering science and mathematical concepts only on a "need to know" basis, and incorporated cooperative learning and the development of oral and written communication skills, at the expense of lecture-based teaching: first year retention rates improved by 50% as a result. Felder, Felder and Dietz (2002) conducted comparable research at another American university, and concluded that the restructuring of course instruction to allow for all learning types led to improved student outcomes.

Richard Felder (1999) has devised a learning style model and inventory for use especially in the engineering and science disciplines. Combining the work of Knowles and Myers-Briggs, this instrument assesses students on four dimensions of preferences,

using 44 questions each with answers (a) or (b) corresponding to one or other extreme of the dimension (eg. active or reflective). The four dimensions are

- **active - reflective** This dimension refers to processing of information. Active learners prefer trying things out and working with others. Reflective learners prefer to think things out and work alone.
- **sensing - intuitive** This dimension refers to ways of receiving information. Sensors like learning facts and using tried methods in practical settings. Intuitors are innovative and enjoy abstract concepts.
- **visual - verbal** This dimension refers to ways of perceiving sensory information. Visual learners relate well to graphs, pictures, diagrams etc. Verbal learners enjoy reading and lectures.
- **sequential - global** This dimension refers to progress toward understanding. Sequential learners prefer taking logical steps toward an outcome. Global learners grasp the big picture quickly and work out the steps later. (Adapted from Fowler, Allen et al. 2000)

These dimensions are assessed as continuum where a learner may be located at any point on the axis between the two extremes. The scoring system ranges from 11a to 11b for each of the four dimensions, with only odd number results possible. For example, if a learner scores 1a or 3a on the active-reflective dimension it would indicate that they have a mild preference for active learning styles, whereas a score of 9b or 11b would indicate a strong preference for a reflective learning style. Scores of 5a or 7a would indicate a moderate preference for the active learning style.

Overall the literature supports the notion that Engineering students have a diversity of learning styles but that few courses are structured to cater for this variety. Studies have shown, however, that once faculty awareness has been raised and the teaching adapted to accommodate all learning styles, student outcomes and attrition rate have responded positively.

Project Methodology

The Felder instrument described previously, known as the 'Index of Learning Styles' (ILS) was originally developed in 1988 and has been widely used for a number of years in several universities. A summary of applications and an assessment of the reliability and validity of the instrument has recently been published (Felder and Spurlin, 2005), and concluded that the ILS is a suitable instrument for assessing learning styles, based on reliability and validity data. It was also concluded that the ILS has two major applications, firstly "to provide guidance to instructors on the diversity of learning styles within their classes and to help them design instruction that addresses the learning needs of all of their students" and secondly to "give individual students insights into their possible learning strengths and weaknesses" (Felder & Spurlin, 2005, p.110). These were exactly the purposes for which the ILS was employed within this project. The latest version of this instrument (Felder, 1999) was used to assess the learning styles of engineering faculty and students in this project.

The team began by presenting as many students as possible with the self-assessment ILS questionnaire so that each individual student would be aware of their preferred learning style. Team members attended lectures for a variety of first and third year courses and gave students a comprehensive overview of what the findings may mean.

Strategies for coping with difference were also handed out, and students were encouraged to retain their results for future reference.

Concurrent with the approach to the students, the team held workshops and discussion sessions for faculty members to raise their awareness of the differences they may encounter amongst students in each class. To this end the collated results of the student questionnaires were returned to faculty members. Faculty were also asked to complete the ILS questionnaire themselves so they were aware of their own learning preferences. Discussions were held over ways and means of presenting coursework in a variety of ways that catered for all learning styles some of the time.

In Semesters 1 and 2 in 2001 and Semester 1, 2002 most first year students and some second and third year students across the three departments had completed the learning styles assessment. This was also extended to a cohort of engineering students in Singapore and to students accessing the bridging program course 'Introductory Communication'. Student assessments were collated in course groups and the group analyses provided to faculty teaching these courses. Students retained a copy of their own assessment for future reference. A summary of the number, year level and department or course of the students tested in each semester is given in Table 1.

It is possible that the results of about 10% of the nearly 700 students tested appear twice in that table. The first time the ILS questionnaire was administered to students, in Semester 1, 2001, it was distributed in orientation week to department first year cohorts who were present at the time, thus students were not within a particular course. The second time it was administered, in Semester 2, 2001, it was given to 7 course groups across years 1 to 3. Two of these groups were first year groups, therefore some first year students may have completed the questionnaire twice. Since all results were returned for processing anonymously, no individual student could be identified thereby making it impossible to eliminate this duplication from the results graphs. However, as the intention of the graphical results was to inform faculty about the general range of learning styles of students in their course or department, this was not considered to be a problem. For students who undertook the questionnaire more than once, this was considered by the project team to be a useful way of providing reinforcement of the importance of understanding personal learning styles to those students.

At the same time that students and faculty were being introduced to the Learning Styles Project, the project team began building a website to provide more comprehensive knowledge of the project and of learning styles in general. The website was designed as a device for dissemination of information and ideas for use by both faculty and students. As well as giving basic information on learning styles and the ILS questionnaire, the site outlines strategies for teaching and learning incorporating the variety of learning styles amongst students. An annotated reference section and a discussion board are also featured with the intention that it will remain an ongoing and evolving outcome of the project. http://www.unisanet.unisa.edu.au/lsproject/learning_styles_home_page.htm

Year & semester	Course and/or department	Year level	No. of students
2001 Semester 1			
	Department of Advanced Manufacturing & Mechanical Engineering (AME)	1	40
	Department of Geoscience, Minerals & Civil Engineering (GMC)	1	33
	Department of Electrical & Information Engineering (EIE)	1	40
	Introductory Communication (Bridging program)	-	67
	Total		**180**
	Academic Faculty		21
2001 Semester 2			
	Computer Applications in Civil Engineering (GMC)	3	15
	Electrical Circuits Analysis (EIE)	1	64
	Engineering Innovation & Practice (AME & GMC)	1	99
	Fluid & Energy Engineering (AME & GMC)	2	49
	Project Planning & Control (AME)	3	46
	Signals & Systems (EIE)	2	59
	Singapore Cohort (Project Planning & Control)	3	33
	Total		**365**
2002 Semester 1			
	Science for Engineers (AME & GMC) and Engineering Physics (EIE)	1	76
	Project Planning & Control (AME)	3	30
	Introductory Communication (Bridging program)	-	41
	Total		**147**

Table 1 - Learning Styles assessment involvement 2001 & 2002

Improving Faculty and Student Understanding of Learning Styles

Since the aim of the project was to raise awareness of the diversity of learning styles amongst both faculty and students, dissemination of information was tackled at two levels. For faculty it was important that they realised the variation of learning styles that existed amongst students in their courses and tried to work towards catering for all types in their teaching. For students it was necessary that they knew and understood their own preferred learning style, but it was also important to give them information on how they might work around differences between their learning style and the teaching they received.

Faculty

To assist faculty to improve their understanding of learning styles, the project was launched in late 2000 with a workshop for all faculty who had volunteered to take part

(21 faculty members, spread quite evenly across the three departments and representing about 35% of the academic faculty in the three departments). The first workshop activity involved faculty assessing their own learning styles using the Felder ILS questionnaire. These results were collated and have been compared with student results in Table 2. Faculty then discussed how learning styles could influence teaching, how they could reassess their own teaching methodology and, where necessary, how to modify it to accommodate the wide range of student learning styles. A follow-up workshop was held at the start of 2002. This reiterated the importance of understanding what learning styles are and how differences can affect student performance. Strategies for changing teaching styles were discussed with the emphasis on the need for minor adjustments rather than viewing it as a major undertaking.

Faculty who had opted into the project met together informally, and the discussion generated at these meetings contributed to an informed approach in broadening teaching and assessment methods. At a meeting early on in the project, for example, the implications of the learning styles profiles shown in Figure 1 were discussed, in particular, students' marked preference for visual learning styles.

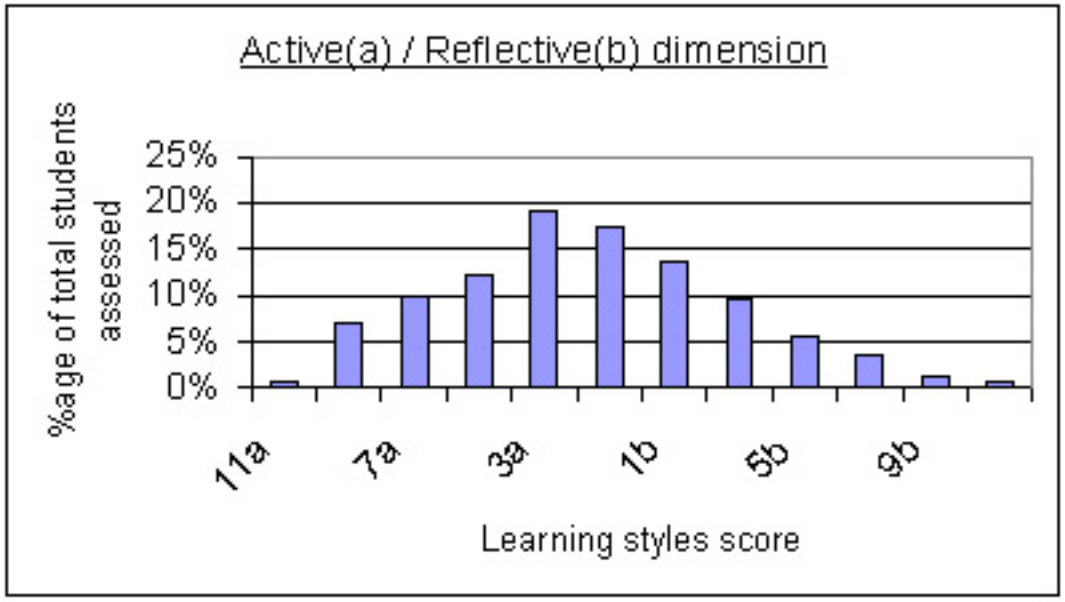
Students

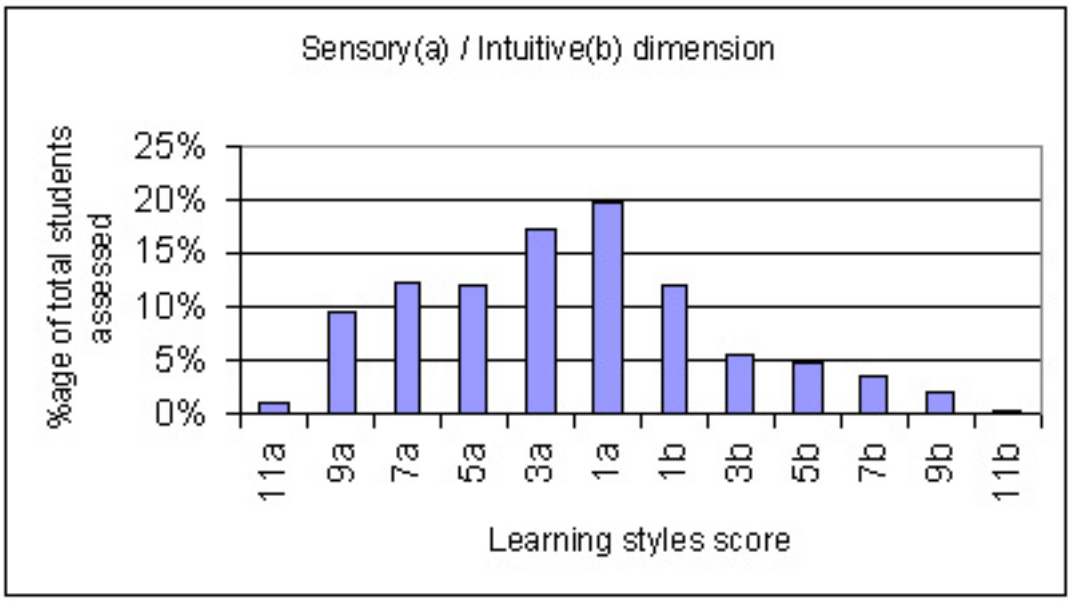
In Semester 1, 2001, 116 students were assessed during Orientation week from four Engineering courses, Engineering Materials N, Engineering Physics, Computer Graphics for Engineers, and Science for Engineers. This involved not just the administration of the questionnaires, but addressing the students about the meaning of learning styles, the aim of the project, and the strategies they can take to adapt their learning to diverse teaching styles. The project was also expanded to include the course Introductory Communication, which was seen to have added benefit, as this course is a component of the University access bridging programs, which allow entry into all the University's science and technology programs. Many of these students subsequently entered non-engineering programs, thus spreading the learning styles discussion beyond the boundaries of the three engineering Departments. Following all the assessments the results were collated and presented to lecturers to enable them to identify the various learning styles of students in their courses. All students were advised to retain a copy of their Learning Styles assessment so they could reflect on the result and develop strategies for coping with any discrepancies they may encounter between their preferred learning styles and faculty teaching styles.

In the first week of semester 2, 2001 a total of 365 students across the three Departments of AME, GMC, and EIE and across undergraduate year levels 1 to 3 were assessed. Members of the project team again spoke to the students giving them an outline of the learning styles and how students could use the knowledge of their individual styles to help with their learning. Following assessment, individual group profile and total student results were circulated to faculty, and course coordinators provided feedback to students.

The data collected from engineering students in both semesters 1 and 2 of 2001 (i.e. excluding the Introductory Communication cohort) has been aggregated to construct the learning style student profiles shown below (Figure 1). Comparative graphs of student and faculty (21 responses) results were also made (Figure 2). The vertical axis in each graph represents the % of students (and staff in Figure 2) from the total number assessed (478 students and 21 staff) who scored that value on the learning styles continuum for each dimension. The horizontal axis represents the student or staff

members' scores on the Felder scoring system explained previously.





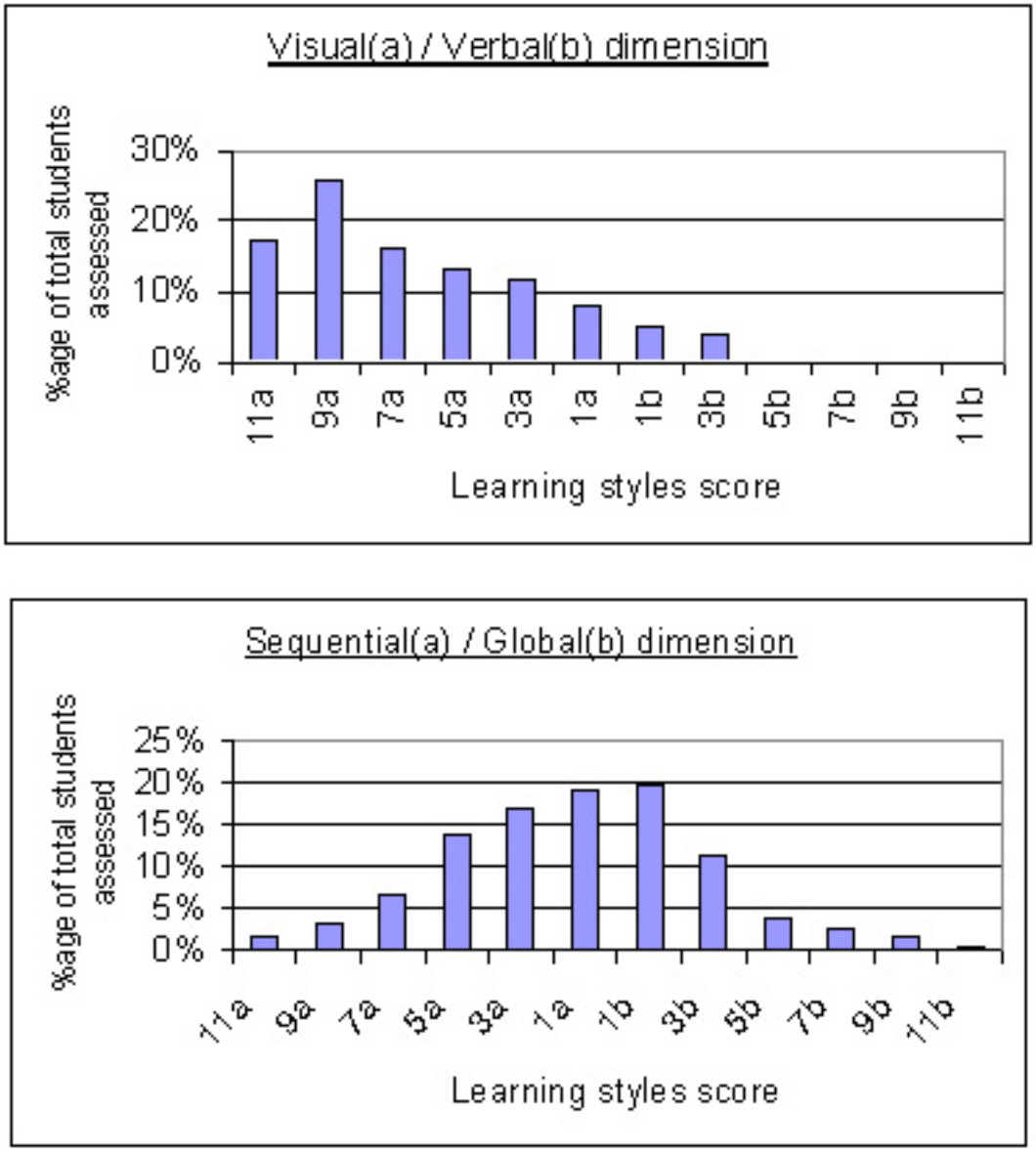
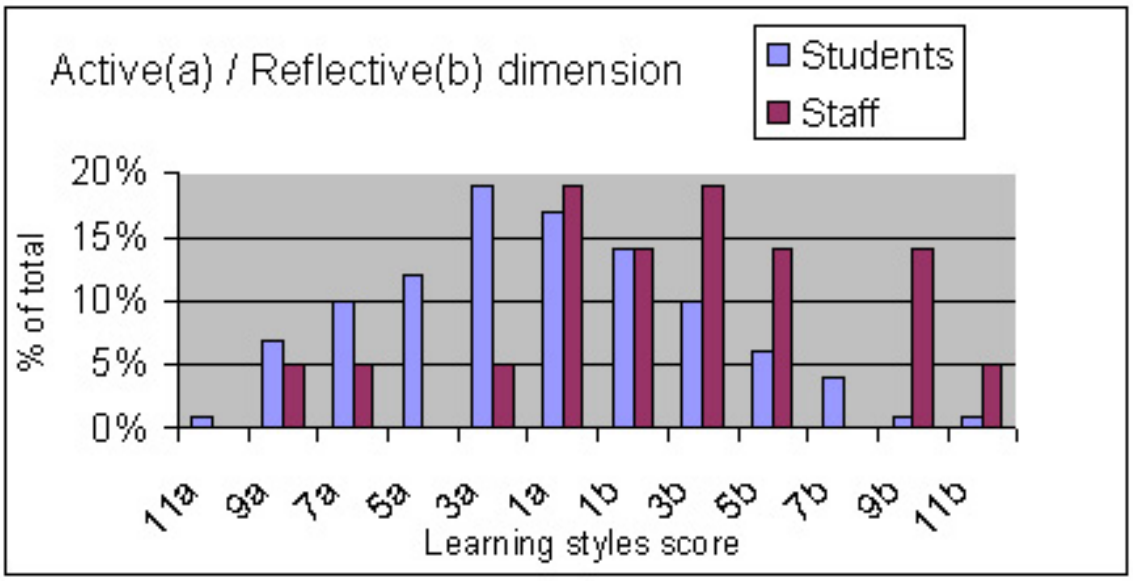
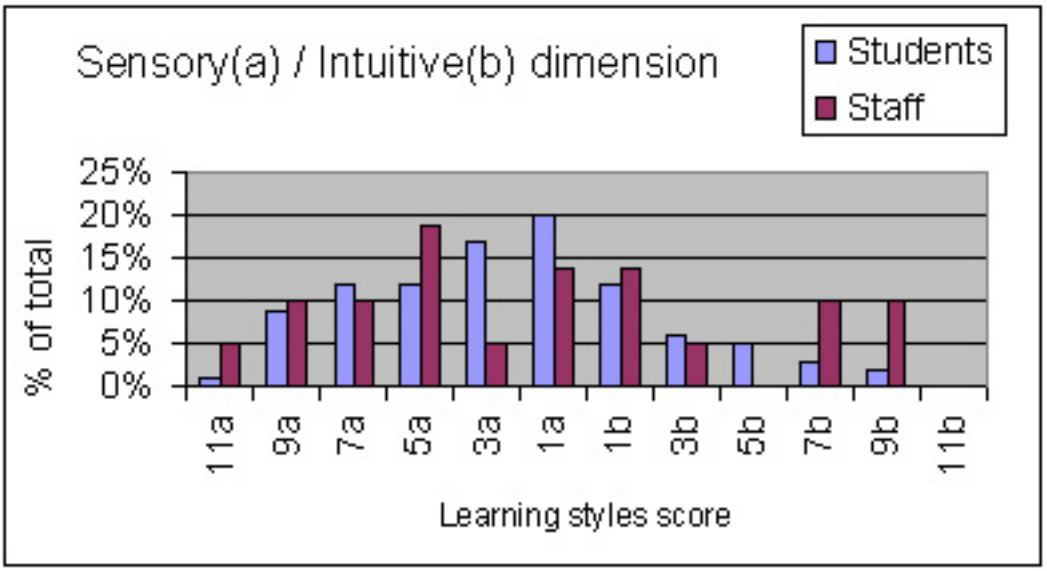


Figure 1: Felder Learning Styles student group profile, all engineering departments 2001


Active(a) / Reflective(b) dimension
Students
Staff
20%
15%
10%
5%
0%
% of total
11a
9a
7a
5a
3a
1a
1b
3b
5b
7b
9b
11b
Learning styles score


Sensory(a) / Intuitive(b) dimension
Students
Staff
25%
20%
15%
10%
5%
0%
% of total
11a
9a
7a
5a
3a
1a
1b
3b
5b
7b
9b
11b
Learning styles score

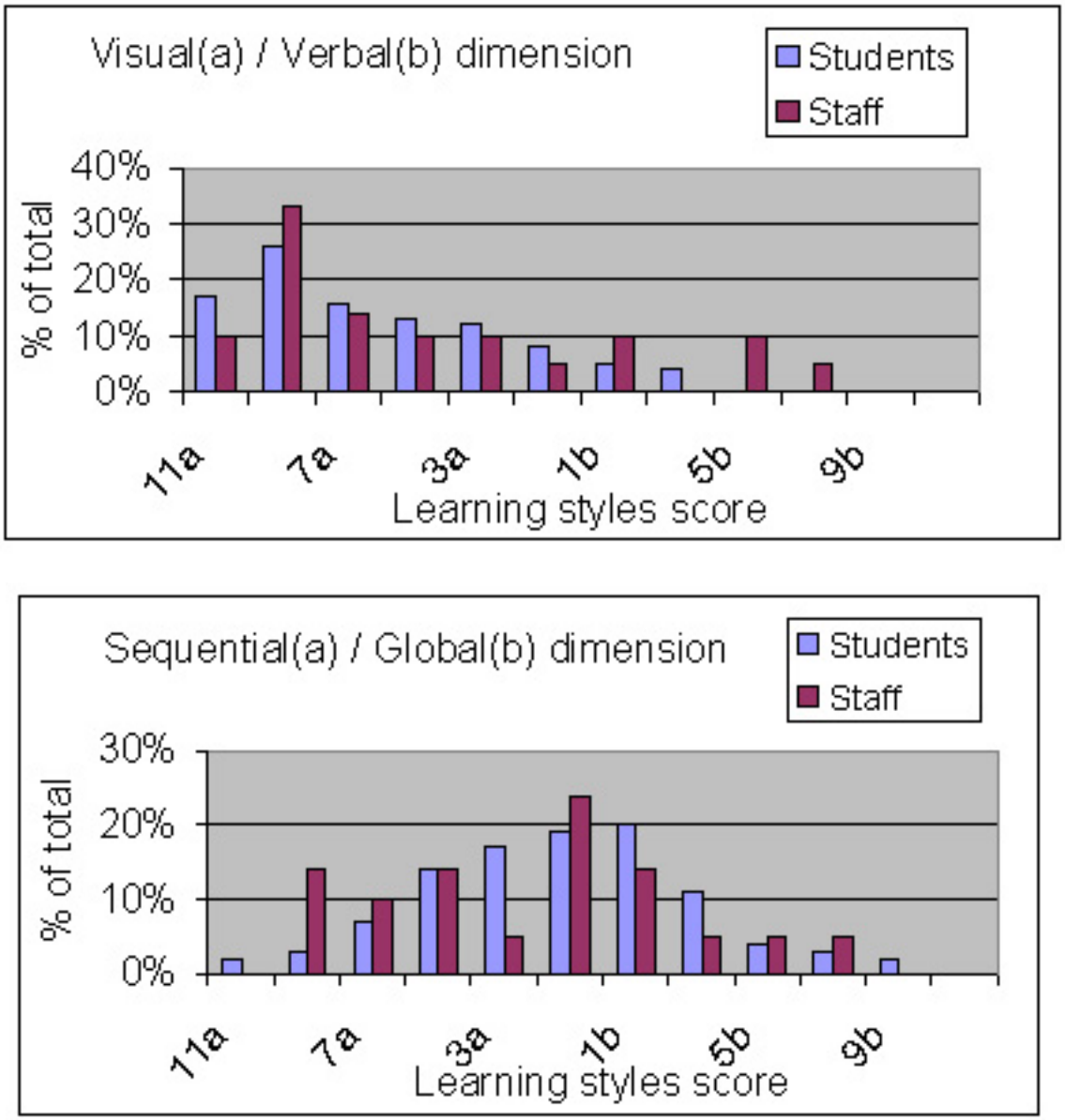


Figure 2: A comparison of student and faculty Learning Styles profiles 2001

In the above graphs, a score of 1-3 indicates a mild preference for one or the other (a or b) dimension but shows an essentially well-balanced approach to learning. A score of 5-7 indicates a moderate preference for one dimension of the scale and shows that a student will learn more easily in a teaching environment that favours that dimension. A score of 9-11 indicates a strong preference for one dimension of the scale and implies that a student may have real difficulty learning in an environment that does not support that preference.

The most notable characteristic of the student learning styles profiles (Figure 1) is the strong skew towards visual, as opposed to verbal, learning styles. The other learning styles are fairly evenly spread across the range, though no students at all were assessed as strongly sequential learners and there is a stronger tendency towards

sensory rather than intuitive learning. The extension of the questionnaire to a cohort of engineering students in Singapore was undertaken to explore any cultural differences or similarities in learning styles compared with the results from South Australian students. The team found little difference between the two campuses.

Whilst some allowance needs to be made for the different sample sizes in drawing conclusions from Figure 2 (478 students, 21 faculty), these graphs demonstrate the variation of styles amongst all participants, but specifically the similarities and differences between faculty and students. There were relatively few differences between faculty and students in the sensory/intuitive, visual/verbal and sequential/global dimensions. There were marked differences, however, in the active/reflective dimension, showing a clear preference for active learning amongst students but with strong preferences for reflective learning by faculty.

Finally, at the start of semester 1, 2002, information about learning styles was again passed on to students from courses in first and third years. 147 students were assessed and results were circulated to faculty who reported back to the students. These results showed no marked differences with those obtained in 2001. Learning styles assessments have continued for all first year students since 2002, but the data has not been collected, rather the purpose has been for student development.

Developing and Implementing Teaching, Learning, and Assessment Strategies and Resources

The lecturers who opted into the project were requested to demonstrate how they would ensure their teaching methods would accommodate all learning styles, and to develop new resources if necessary. As was to be expected, each lecturer tackled this requirement in a different way. An example of one of the approaches utilised follows.

Engineering Materials

The lecturer of this first year, Semester 1 course provides all students with a 'Tutorial Book' that outlines how the course is structured and the tutorial schedule. It also provides reference material, details about assessment methods, and other general information. Since the inauguration of the Learning Styles Project the Tutorial Book contains an additional page that explains how the teaching, learning and assessment methods employed in this course cater for all learning styles. This additional page is summarised here:

Lectures illustrated with photographs, sketches and graphs, cater for both visual and verbal learners. They are designed in a logical progression of facts and concepts, and thus also cater for sequential learners.

Tutorials are mainly problem-solving exercises, which should be attempted before the session, either in groups or individually, catering for active or reflective learning styles. When appropriate, group work is also permitted in the tutorial itself. Demonstrations and videos assist those with visual and sensing learning styles.

Case study sessions require group work, catering for active learning styles. Within the group, students are also expected to perform individual tasks, which is where reflective learning is required. Groups in which all learning styles are represented will be those

which work most effectively. The sensing and sequential learners will contribute their logical thinking and apply the established procedures to the problems while the intuitive and global learners will more readily solve complications and look at the overall problem.

Assessment has 3 components which are sufficiently varied in format to cater for all learning styles: assessment of the case studies, regular quizzes, and an examination. Marks for the first 2 components are awarded in the ratio 3:7, and only those students who achieve less than 50% for these two components have to take the exam. Students who score 50% or more and choose not to attempt the exam will maintain their combined continuing assessment mark up to a maximum of 74%. For the students with a continuing assessment mark of 50% or more, the exam is a means of improving their overall mark.

Evaluations

At the end of semester 2, 2001, and the end of semester 1, 2002, a learning styles specific evaluation was administered to several courses involved in the project in which students were asked to evaluate their own understanding of learning styles and how teaching relates to them. The main purpose of these evaluations was to determine whether the Learning Styles project had been effective in raising awareness amongst students about learning styles and whether students felt that teaching in the course addressed their preferred learning styles. Results were forwarded to respective faculty members responsible for teaching those courses.

Findings from Evaluations 2001 Only 35% of the students evaluated in semester 1 felt they had improved their understanding of learning styles, (this includes those who did not do the assessment in orientation week.) with 78% indicating that they did not feel that the teaching in the course had specifically addressed their preferred learning styles or didn't know if it had. All students evaluated in Semester 1 were in first year courses. Semester 2 evaluations showed a marked improvement with 58% of students reporting that they had improved their awareness of learning styles in the courses. Some of the first year students would have been exposed to Learning Styles assessment in both orientation week and their second semester courses and hence also received the evaluation twice. Students evaluated in later year courses in semester 2 had received only the exposure to Learning Styles incorporated within their courses that semester. The discrepancies between the two semesters suggests that either the link between teaching and learning had not been made strongly enough in the first place, or there was a need for reinforcement of learning styles throughout the year, particularly for early year students..

2002 Evaluations in Semester 1, 2002 gave similar results to Semester 2, 2001 with the first year course, Introduction to Electrical Engineering, having all students recalling learning styles (although a small sample (16 students)). This course also had the best response to the positives of the teaching in the course. It should be noted here that this was the only course that outlined in the course handbook what learning styles are before outlining how the course was addressing the issue.

Overall, findings from the evaluations suggest that:

- There is, in the main, a lack in course design that addresses learning styles specifically
- Learning styles should be reinforced at regular intervals throughout the year (to students and faculty)
- Details of how different learning styles can affect learning need to be included in handbooks, not just how the course will address them

Mainstreaming of Learning Styles Understanding

One of the final challenges facing the project team was that of ensuring that the progress made in the engineering departments during the project, regarding student and teacher awareness of learning styles, was not lost as soon as the funded project was completed. The concept of "mainstreaming" the project approaches into the ongoing teaching and learning practices of the departments was adopted to address this, through both faculty and students.

Mainstreaming via Faculty

The team perceived this to be a two way process using 'directive down' and 'encouragement up' to get the required results. A mentoring system was informally instigated during the project time frame with committed faculty members passing on information and ideas to colleagues. This system has continued with informal, collegial discussions being held to maintain awareness of the project and subsequent presentations made by one of the authors at teaching workshops within the Division. It was also recommended that this should be picked up through the portfolio of the Dean, Teaching and Learning, with Learning Styles figuring as part of that umbrella.

The project team also requested that Heads of Departments direct faculty to include a section on Learning Styles in each course handbook. This would encourage faculty to constantly rethink their teaching practices in line with divergent learning styles. The web site will be a valuable tool in this process.

Mainstreaming via Students

A specific session on Learning Styles has been allocated during Orientation week each year since 2003 so that as many first year engineering students as possible are informed of the implications of learning styles for learning and teaching. This session is conducted by the first author often with support from campus Learning Advisors. Reiteration of the value of learning styles needs to done at regular intervals throughout the year and it is hoped this will be done at all year levels by those faculty who have been actively involved in the project, with 'refresher' ILS questionnaires allowing students to note any changes as they progress through their university career. This can be achieved through the web site, where students can also access the 'Strategies for learning' page to help them in their course work.

Conclusion

There is considerable evidence from previous studies to show that faculty assumptions about "typical" learning styles of engineering students are inaccurate and that a wide range of learning styles will actually exist within any engineering class. This has been reinforced again by the results of the current project. It is therefore important to raise the awareness of faculty responsible for engineering education about the likely effects on student achievement if teaching and assessment practices do not accommodate this range. This paper discusses a project that focused on awareness raising, and education about learning styles, for both faculty and students in a variety of engineering disciplines at the University of South Australia. The primary requirements for improved teaching and learning in this area are improved knowledge and understanding of learning styles, and reflection on practice, followed by any necessary modifications to practice in the light of this knowledge. The project initiated a process for faculty and students to achieve this, but also highlighted the necessity for mainstreaming this process if the improvements to teaching and learning are to continue. The Learning Styles Project web site is an important resource to support mainstreaming. Another strongly recommended strategy to achieve mainstreaming is to include learning styles information in course handbooks along with the web site URL, giving students, as well as faculty, continuing access to information on all aspects of learning styles.

References

Anderson, M. (1991) Learning styles of the graduate career change woman engineer: then and now. Proceedings of *GASAT 6th International Conference*, University of Melbourne, Victoria, Australia,

Ballard, B. and Clanchy, J. (1997), *Teaching International Students*. Canberra, Australia: IDP Education Australia.

Beyer, K. (1993) Gender, science anxiety and learning style. Proceedings of *GASAT 7th International Conference*, University of Waterloo, Ontario.

Briggs-Myers, I. (1989) *A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Palo-Alto, USA, Consulting Psychologists Press.

Felder, R., and Silverman, L. (1988) Learning and teaching styles in engineering education. *Journal of Engineering Education, 78, 7*, 674-681. On-line at http://www2.ncsu.edu/unity/lockers/users/f/felder/public/Papers/LS-1988.pdf

Felder, R. (1993) Reaching the Second Tier: Learning and Teaching Styles in College Science Education. *Journal of College Science Teaching, 23, 5*, 286-290. On-line at http://www2.ncsu.edu/unity/lockers/users/f/felder/public/Papers/Secondtier.html

Felder, R. (1996) Matters of Style. *Prism (American Society of Engineering Education), 6, 4*, 18-23. On-line at http://www2.ncsu.edu/unity/lockers/users/f/felder/public/Papers/LS-Prism.htm

Felder, R. (1999) *Index of Learning Styles* (ILS). On-line at http://www2.ncsu.edu/unity/lockers/users/f/felder/public/ILSpage.html

Felder, R., Felder, G. and Dietz, E. (2002) The effects of personality type on engineering student performance and attitudes. *Journal of Engineering Education, 9, 1*, 3-17. On-line at http://www2.ncsu.edu/unity/lockers/users/f/felder/public/Papers/longmbti.pdf Felder, R. and Spurlin, J. (2005) Applications, Reliability, and Validity of the Index of Learning Styles. *Intl. Journal of Engineering Education, 21(1)*, 103-112. On-line at http://www.ncsu.edu/felder-public/ILSdir/ILS_Validation(IJEE).pdf

Fowler, L., Allen, M., Armarego, J. and Mackenzie, J. (2000). Learning styles and CASE tools in Software Engineering. Flexible Futures in Tertiary Teaching, Perth: Curtin University of Technology. On-line at http://lsn.curtin.edu.au/tlf/tlf2000/fowler.html

Harding, J. (1996) Girls' achievement in science and technology: Implications for pedagogy. In: Murphy, P.F. and Gipps, C.J. (Eds.). *Equity in the classroom*. Falmer Press/UNESCO Publishing,

Holt, J. and Solomon, F.(1996) Engineering Education - The Way Ahead. *Australasian Journal of Engineering Education, 7, 1.* On-line at http://elecpress.monash.edu.au/ajee/vol7no1/holt.htm

Kolb, D. (1984) *Experiential Learning: Experience as the Source of Learning and Development*. New Jersey, Prentice Hall.

Kramer-Koehler P., Tooney N., and Beke, D. (1995) *The Use of Learning Style Innovations to Improve Retention*. On-line at http://fie.engrng.pitt.edu/fie95/4a2/4a22/4a22.htm

University of Western Australia (1996) *Do Male and Female Students Differ in their Preferred Style of Learning?* Institutional Research Unit, Perth, Western Australia.

Zywno, M. and Waalen, J. (2001) The effect of hypermedia instruction on achievement and attitudes of students with different learning styles. Proceedings of the *2001 American Society for Engineering Education Annual conference & Exposition* Session 1330. On-line at http://www.asee.org/conferences/search/00287_2001.PDF

Embedding Information Literacy into a Merchandising Curriculum

Jean D. Hines
School of Family and Consumer Sciences
Bowling Green State University
Bowling Green, Ohio, USA

Mary E. Swinker
Human Development & Environmental Studies
Indiana University of Pennsylvania
Indiana, Pennsylvania, USA

Diane K. Frey, Ph.D.
School of Family and Consumer Sciences
Bowling Green State University
Bowling Green, Ohio, USA

Kelly M. Broughton
Reference Coordinator
Bowling Green State University
Bowling Green, Ohio, USA

Abstract

A significant trend in higher education is the focus on information literacy and the inclusion of the Information Literacy Competency Standards for Higher Education developed by the Association of College and Research Libraries (ACRL) into the curriculum. This study reports a teaching and learning strategy for integrating information literacy into merchandising instruction. Merchandising faculty and an academic librarian collaborated to develop problem-based assignments to integrate information literacy into two courses. Students learned computer retrieval systems, advanced search strategies using electronic research databases, and how to evaluate sources. Since integrating information literacy standards, the students are selecting more appropriate sources to complete their assignments and expressing less frustration in finding required information.

Embedding Information Literacy into a Merchandising Curriculum

Often when students who lack information literacy skills are given complex research assignments, they complain of not finding information on the Internet about the topic, or they report unrelated information because it was among the top references provided by the search engine. Students also express frustration because, although they know how to use a computer, they are ineffective in finding credible or relevant information from sources such as government agencies, professional organizations, research journals, or periodicals.

As the amount of available information grows and the avenues to access it expand, students continue to struggle with the search process. Teaching and guiding students through the process of finding, managing, evaluating, and analyzing information is a challenge for librarians and educators alike. Librarians began to address these concerns by developing the Information Literacy Standards for Higher Education (American Library Association, 1989; Association of College & Research Libraries, 2000) and courses that focus on information literacy skills. Faculty in academic disciplines in many institutions are being encouraged or even required to include information literacy in their programs with some already incorporating it in course objectives and learning outcomes.

While several researchers have reported a positive relationship between information literacy and learning (Carey, 1998; Chung, 2003; Garland, 1995; Stripling, 1995; Todd, 1997), the best delivery method for teaching information literacy skills is currently being debated. This study proposes teaching strategies for the inclusion of information literacy into merchandising programs by working collaboratively with librarians on discipline-specific projects.

Review of Literature

Information literacy is a set of skills used by individuals to "recognize when information is needed and the ability to locate, evaluate, and use effectively the needed information" (Association of College & Research Libraries, 2000, p.2). Information literacy includes topics such as information technology, critical thinking, synthesis in writing, and disciplinary knowledge. "Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, having the skills to find the information needed for any task or decision at hand" (American Library Association, 1989).

On January 18, 2000 the Association of College and Research Libraries (ACRL) Board of Directors, adopted five standards developed by the ACRL Standards Committee on Information Literacy. The standards state that an information literate student:

1. Determines the nature and extent of the information needed.
2. Accesses needed information effectively and efficiently.
3. Evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. Uses information effectively to accomplish a specific purpose.
5. Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally (Association of College & Research Libraries, 2000, pp. 8-13).

The ACRL Information Literacy Competency Standards are perceived as a landmark in higher education for articulating information literacy (Arp & Woodard, 2000). Despite an increasing recognition of the importance of information literacy, there is little concrete discussion in how to implement it into academic disciplines (Cunningham & Lanning, 2002; Grafstein, 2002). One of the most debated issues is the effectiveness of teaching

information literacy as a stand-alone information literacy course (Johnston, B. & Webber, S., 2003; Shapiro& Hughes, 1996). According to Grafstein (2002), many studies have emphasized the teaching of generic skills related to the general process of retrieving and evaluating information, as opposed to the skills required for acquiring knowledge or doing research in a specific subject area (p.197).

While this can offer a convenient and concentrated way to systematically reach students, many librarians and educators believe that separating information literacy from the subject content of students' majors lessens the impact. It makes it more difficult for them to make the connection between information literacy outcomes and what they may view as the skills they will need in the "real world" (Bruce, 1997). To this end many colleges and universities are encouraging academic librarians and faculty members to collaborate to achieve specific information literacy learning outcomes in courses or programs. In these cases the librarians may assist the faculty in developing assignments, teach modules related to information literacy within the department's courses, or team-teach with departmental faculty (Black, Crest, & Volland, 2001; Booth & Fabian, 2002; Bruce, 1997; Cunningham & Lanning, 2002; Grafstein, 2002).

Information Literacy Assignments

To incorporate information literacy into this merchandising curriculum, collaboration among faculty members and librarians was established. Information literacy was integrated into two courses, an introductory merchandising course and an advanced course on global sourcing. The faculty members provided the context for learning, structured problem-solving assignments to encourage information seeking, and monitored students' progress. The academic librarians provided the framework for seeking, selecting, and evaluating appropriate resources for the assignment.

Introductory Course. In the introductory course, a career exploration report was assigned where students were required to investigate two careers in merchandising and one company where they could work in one of the two careers. They had to gather both general information about the careers and specific information about the career in the identified organization. The information search focused on the first competency standard developed by the Association of College and Research Libraries (ACRL): "The information literate student determines the nature and extent of the information needed" (Association of College & Research Libraries, 2000, p. 8). The emphasis was on increasing awareness of the scope and breadth of business and trade sources available to solve problems by using retrieval systems, learning the strategies for searching information sources, and using multiple sources in many locations and formats to complete the assignment.

Students spent one class period in the library computer lab with the librarian. The librarian created an interactive class web page identifying both print sources and links to web sites appropriate for the assignment (see a portion of the website in Figure 1). The web page listed reference books on careers, occupational outlooks, and private and public companies. Active web site links to sources for the apparel industry, business and finance reports, search engines, and citation formats were provided. The librarian also introduced them to the library web page, explained the process for searching the library catalog, and instructed them on constructing a simple search using appropriate keywords.

CAREER & OCCUPATION REFERENCE BOOKS

Chronicle Guidance Briefs CD-ROM Ask at the Reference Desk
Describes the occupation and the skills and education needed. It also discusses earnings potentials and lists resources for further information.

Encyclopedia of Careers and Vocational Guidance REF HF 5382 .E52 A 4-volume guide by occupation. It includes job descriptions and outlooks.

Professional Careers Sourcebook REF HF 5382.5 .U5 P76 Listed by job categories, this book gives sources such as books, chapters, periodicals, associations, and Web sites for further career study.

Occupational Outlook Handbook REF DESK L 2.3/4 This handbook produced by the U.S. Department of Labor, includes descriptions of the occupation, working conditions, training & qualifications, outlook and earnings.

COMPANY INFORMATION IN REFERENCE BOOKS

Hoover's Handbooks REF HG 4057 .A286213 (Annual) These handbooks on American public companies, private companies, world companies and emerging companies provide an excellent 1 - 2 page summary of a company's history, financials, outlook, brands & subsidiaries, and key competitors.

Directory of Corporate Affiliations REF HG 4057 .A219 Eight volume set includes public, private and international companies. The layout gives a nice presentation of a corporate family and it has a brand name index.

RESEARCH DATABASES FOR INDUSTRY AND TRADE INFORMATION

Business and Industry
Contains the full text of articles from titles such as WWD, Textile World, and Daily News Record.

Business Source Premier
Contains the full text of articles from Apparel Magazine, Bobbin, and others.

Figure 1: Abbreviated Web Page Designed for the Career Exploration Report.

Global Sourcing Course. In the upper level course, the search for information was more advanced. The information literacy focus was on the second, third, and fourth ACRL competency standards: "The information literate student accesses needed information effectively and efficiently," "The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system," and "The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose" (Association of College & Research Libraries, 2000, pp. 9, 12). Instruction in information literacy skills was structured to be more complex than in the previous course and involved students constructing and implementing advanced search strategies and

evaluating the sources for validity of the information. These skills were essential as teams investigated textile and apparel production in developing countries, to determine where production of private label merchandise for their fictitious company could take place. As part of the assignment, students completed an annotated bibliography that was due prior to the final report.

To ensure their success in advanced search strategies, the students again received instruction from the librarian in the library computer lab. Instruction included analyzing print sources, using research databases, refining searches, and critically evaluating print and electronic sources.

Each team was given a reference book that related to the sourcing project such as, the Encyclopedia of Global Industries, International Trade Statistics Yearbook, and Guide to the World's Major Emerging Economies. Team members used a form similar to the one in Figure 2 to evaluate their print source. Emphasis was on how valuable the information was to the assignment. Each group shared with the rest of the class a summary of their findings.

Reference Book: Encyclopedia of Global Industries

How do you use this book or how is it arranged?

What information in it might be helpful?

Reference Book: International Trade Statistics Yearbook How do you use this book or how is it arranged?

What information in it might be helpful?

Reference Book: Guide to the World's Major Emerging Economies

How do you use this book or how is it arranged?

What information in it might be helpful?

Figure 2. Form used to analyze print sources.

The librarian introduced students to appropriate electronic research databases for the project and instructed them in how to access them. Students had an opportunity to search one of several database available through the university library. Each group of two students was assigned a database such as the Business Source Premier, which indexes nearly 3,000 full text scholarly journals, to search for information. Using the form in Figure 3, they searched for information about their developing country. They recorded the keywords used and the limits they set on the search as well as the results. The librarian instructed the students in the importance of changing or adding keywords, using Boolean operators, and setting limits on searches to try to focus results to relevant

sources. Some student groups shared their search strategies with the librarian who then projected them for the benefit of the entire class to see. This allowed the class to see a variety of databases and appropriate ways to limit and focus the number of hits for a search. This teaching strategy was designed to develop the information literacy skills included in the second and fourth ACRL Information Literacy Standard.

			Database Search Log
Database Name_____			
Search	Limits/Dates/Others	How Many Results?	Anything Useful?

Questions, Frustrations, Don't Understand:

_____

Figure 3. Form used to record the results of the database search

Students used a web page evaluation form to critically analyze the credibility of information retrieved from the World Wide Web. They used search engines to find information about out-sourcing in developing countries. They selected one of the web sites (hits) from their search and used the form to evaluate its validity (see Figure 4). This lesson was designed to develop the information literacy skills included in the third ACRL Information Literacy Standard.

Web Page Evaluation

Page Title:_____

URL:_____

Date & Time Page Accessed:_____

Answer the following questions about your web page. Answer NA if the information is not available.

Who is the author? What are his or her credentials?

Who is the sponsor of the site? What is the sponsor's purpose, mission or goal?

If there is an organization affiliated with the site or its author, what is its purpose or intent?

How much of what you need to know is given here?

Is it unique compared to the other resources you've already found?

Is the material free of error (typos, spelling, grammar, etc.)?

Are the sources for factual information in the material clearly identified?

Is any bias present? If yes, explain.

To what extent is the material meant to persuade? Is this clearly stated?

If there is advertising on the page, does it influence the material's contents? Is the advertising clearly separate from the resource contents?

Who is the intended audience?

When was the site last updated? Is the currency of this information important for your research?

Figure 4. Form used to evaluate a web site.

After the library session, there were opportunities for the students to continue the information literacy learning process on an individual or team basis. Librarians were available to answer students' questions by email, through online chat sessions, or by scheduling an hour appointment specific to their project. This extended the information literacy learning process through the completion of the project and further reinforced the concepts learned.

Results and Discussion

Adding the information literacy component to the merchandising curriculum has been effective. Since its inclusion, the students are using a variety of information types and formats to complete their assignments, expressing less frustration in finding required information, and selecting more appropriate sources than in previous years when instruction was not provided.

A comparative analysis of the annotated bibliographies and reference lists submitted by the students for the global sourcing assignment before inclusion of the information literacy component to those after its inclusion show a substantial difference in the type and amount of information retrieved and used in the assignment. Before the inclusion, the mean number of sources cited in the final written report was four and the mean number of sources searched was eight (the minimum number required in the assignment). Most of the sources used at that time (54%) resulted from using Internet search engines.

After inclusion of the component the mean number of sources cited in the final written report was eight and the mean number of sources searched was15. Over 75% of the sources used by students were from articles retrieved from research databases, government documents, or trade-related print sources available in the campus library.

Another important qualitative change that has occurred with the addition of the information literacy component is that students no longer have problems finding credible and relevant information for their reports. Prior to the inclusion, over 60% of the teams

would complain about not being able to find information, especially related to the textile and apparel industry in their regions. The majority of the earlier reports we mainly focused on the region in general with very little or no information on the textile and apparel industries, especially from reliable resources. The type of information has shifted dramatically, with the majority of the report now on textile and apparel production and trade.

Information literacy has been added as one of the learning outcomes in the merchandising program. Inclusion of Information literacy skills is imperative since students will be entering a profession based on change and innovation. The rapid expansion of information and multiple ways to access electronic sources poses new challenges for students and professionals. They need the ability to effectively access, manage, focus, and evaluate information.

Over the three years the faculty and librarians have collaborated, the faculty members have recognized the need to integrate information literacy with the computer literacy (information technology) and writing skills competencies already in place. Not only are students expected to be resourceful in finding information, but they must also have technological skills needed to search, write, and produce various academic projects. After a successful information search, communication skills are necessary to articulate ideas in appropriate written form. Skills in computer literacy and English composition are important components of successfully integrating information literacy into a merchandising curriculum. The three skills complement each other and impact the content and presentation of projects.

References

American Library Association (1989). *Presidential Committee on Information Literacy. Final Report*. Chicago. Retrieved February 13, 2003 from http://www.ala.org/acrl/nili/ilit1st.html.

Arp, L. and Woodard, B.S. (2002). Recent trends in information literacy and instruction. *Reference & User Services Quarterly*, (42)2, 124-132. Association of College & Research Libraries (2000). *Information Literacy Competency Standards for Higher Education*.

Black, C., Crest, S., and Volland, M. (2001). Building a successful information literacy infrastructure on the foundation of librarian-faculty collaboration. *Research Strategies*, (18), 215-225.

Booth, A. and Fabian, C.A. (2002). Collaborating to advance curriculum-based information literacy initiatives. *Journal of Library Administration*, 36(1/2), 123-142.

Bruce, C. (1997). *The Seven Faces of Information Literacy*. Adelaide, Australia: Auslib Press.

Carey, J.O. (1998). Library skills, information skills, and information literacy; implications for teaching and learning. *School Library Media Quarterly Online.* Retrieved January 12, 2005 from http://www.ala.org/aasl/SLMQ/skills.html

Chung, J. (2003). Information use and meaningful learning. Unpublished doctoral dissertation, University of Maryland, College Park.

Cunningham, T.H. and Lanning, S. (2002). New frontier guides: faculty-librarian collaboration on information literacy. *Reference Services Review* (30)4, 343-348.

Garland, K. (1995). The information search process: study of elements associated with meaningful research tasks. In B. J. Morris (Ed.), *School Llibrary Media Annual 1995* (pp. 171-183). Englewood, CO: Libraries Unlimited.

Grafstein, A. (2002). *A discipline-based approach to information literacy. The Journal of Academic Librarianship*, 28(4), 197-204.

Johnston, B. and Webber, S. (2003). Information literacy in higher education: a review and case study. *Studies in Higher Education*, (28)3, 335-352.

Shapiro, J.J., Hughes, S.K. (1996). Information technology as a liberal art: Enlightenment proposals for a new curriculum. *Educational Review* 31, 31-35.

Stripling, B. K. (1995). Learning-centered libraries: implications from research. *School Library Media Quarterly*, 23(3), 163-170.

Todd, R.J. (1995). Integrated information skills instruction: Does it make a difference: *School Library Media Quarterly*, 23(2), 133-138.

A Module Approach to Online Integrative Teaching and Learning

Jane M. Cirillo Department of Psychology Houston Community College System - Southeast College Houston, Texas, USA

Cammy S. Artiz Department of Government Houston Community College System - Southeast College Houston, Texas, USA

Abstract

A Module Approach to Online Integrative Teaching and Learning is an innovative model that provides faculty with the opportunity to incorporate an interdisciplinary component in their distance education and hybrid course curriculum. Accordingly, interactive asynchronous discussions between students, students and guest, and students and content are facilitated by an expert guest over a period of four weeks with the main goals of integrating other disciplines into the existing course content, and promoting critically reflective discourse. Several strengths of this model include ease of use, flexibility, and creation of a stimulating learning community for students and faculty. The following article provides step by step guidelines for implementation as well as implications that accompany the application of this pedagogy.

Introduction

At many institutions, students enrolled in on-campus courses have the opportunity to broaden their educational experience by engaging in activities that facilitate integrative learning. Some of these activities include interacting with peers and faculty, listening to and communicating with guest speakers, and participating in college hosted roundtables. These integrative learning experiences provide students with the forum to apply their learning and knowledge base to a host of concepts and disciplines as well as facilitate the application and transfer of knowledge to an array of contexts including their personal and professional lives (Edelstein & Edwards, 2002; Huber & Hutchings, n.d.). Furthermore, integrative learning experiences play a vital role in generating knowledge, assisting students in synthesizing their learning from a multitude of sources, and fostering critical thinking by making associations between theory and practice (Huber & Hutchings, n.d.).

One of the dilemmas faced by instructors who are developing online courses is simulating the on-campus learning experience and designing a framework by which integrative learning activities may be incorporated into their course curriculum. Several studies suggest the use of online discussion boards and group discussion formats as one of the most basic means for promoting class participation, and interaction amongst peers, faculty, and course content (Edelstein & Edwards, 2002; Woods & Ebersole, 2003). Other studies document the application of threaded discussions whereby students engage in a meaningful dialogue that integrates course content with practical knowledge that is relevant to the overall learning community ((Edelstein & Edwards, 2002). This mode of online learning is flexible in that students may be required to post more than once and facilitators may or may not provide feedback to guide the conversation (Edelstein & Edwards, 2002).

According to Holmberg (1983) guided didactic discussions are vital to the learning

process (as cited in Kelsey & D'souza, 2004). Moore (1989) concurs and adds that these discussions need to involve interaction between students and instructor, students and students, and students and course content (as cited in Kelsey & D'souza, 2004). Pea (1994) adds that the outcome of engaging in interactive dialogues, particularly when experts in their field are asked to participate can result in a transformative form of dialogic learning (as cited in Kumari, 2001). To foster a transformative dialogue, as well as design an effective distance education course, communication needs to be reciprocal as well as learner-centered (Moore, 1989, as cited in Kelsey & D'souza, 2004).

Kumari (2001) conducted an innovative form of learning with graduate students through web-based conferencing that involved the use of "asynchronous interactive" (p. 1) learner-centered threaded discussions moderated by virtual guests who were experts in their discipline. The primary responsibility of the virtual guests was to act as a resource for the class, post topics that were relevant to the course to which students replied, and respond to students who articulated concerns or had inquiries pertaining to their field of study. Although this study was conducted with students enrolled in a traditional on-campus graduate course, it may be applicable to online distance education classes.

As a result of the applicability of the component employed by Kumari (2001) to online distance education courses, the authors of this article developed a model titled A Module Approach To Online Integrative Teaching and Learning which builds upon the experience noted in the previous paragraph and embraces the philosophy of interactive reciprocal communication discussed by Moore (1989, as cited in Kelsey & D'souza, 2004) and transformative dialogic learning noted by Pea (1994, as cited in Kumari, 2001).

Background

The genesis of our interest and involvement in integrative learning began with a forum where we combined our knowledge in the fields of psychology and political science at a presentation pertaining to the events of September 11, 2001. Through this collaboration, we realized that this type of pedagogy would be beneficial to our students, as it would enable us to combine diverse approaches, concepts, and theories to our respective subject areas. Accordingly, our students made meaningful connections between their life and educational experiences and new knowledge. Due to the success of this collaboration, we decided to apply this process to our distance education online courses.

Our first venture began with inviting each other as guest speakers in our online courses. Similarly to the asynchronous discussion strategies noted in the introduction, we posted a query that encompassed both a psychology and political science knowledge base. Depending on the respective course, the role of the guest was to provide the psychological or political perspective. Upon the posting of our respective view, we suggested that students critically reflect on the query as well as the view of the guest speaker and then reciprocate with a response. The guest entered the course on another occasion and then posted another aspect of the discussion in her respective field, which stimulated further dialogue. Although this form of instruction was beneficial and some students engaged in ongoing dialogue, it was limited. Several limitations included only a few students reciprocated and it lacked interaction between guest and students.

Consequently, we developed a comprehensive model that encompasses the reciprocal interaction amongst students and students, students and instructor, and students and guest expert. This model is described in detail in the following section of this article.

A Module Approach to Online Integrative Teaching and Learning

The Module Approach to Online Integrative Teaching and Learning is a step-by-step, transformative and integrative pedagogical model that provides higher education faculty with an instrument by which to weave interdisciplinary studies into the tapestry of their online course curriculum. This approach enables faculty to invite a guest to initiate and moderate a discussion that integrates the tenets of the course discipline with tenets of an opposing field in which the guest has expertise. Over the course of four weeks, a series of interactive asynchronous discussions take place between the guest and students, students and students, and students and inquiry content, culminating in a real time debriefing discussion pertaining to the classes' overall learning experience. Use of threaded discussions rather than real time chat rooms is recommended as the primary tool for conversing because it affords the reflective time needed for fostering critical thinking, accommodates students work time frame, and provides students and guest with the opportunity to offer feedback without being online at the same time. These variables play an important function in building an online learning community which is central to creating an environment conducive to ongoing transformative dialogic learning.

Besides considering the above mentioned variables, it is valuable to define the roles of all participants. The main role of the instructor is to design a generative question which initiates the discussion, divide students into teams, introduce the guest to the class, define the role of the guest, and set up the asynchronous discussion boards for each component of the module. Guest experts are responsible for probing, questioning, keeping discussions on track, providing insights, and guiding students to resources for additional information. Students are asked to reciprocate with responses formulated individually as well as in teams.

This model is particularly beneficial to professionals who are interested in implementing innovative educational experiences but may not have the resources to design a traditional interdisciplinary course. Since this has the potential of being a limiting factor, we propose a module system, whereby instructors have the flexibility of including as many segments needed per semester.

There are several main goals of this model. The first goal is to facilitate critically reflective discourse and collaborative learning amongst students, student and faculty, and students and course content. A second goal is to create an infrastructure for the development of online discussions that emphasizes integrative learning. Thirdly, we hope to provide distance education students with similar learning opportunities as their peers who are enrolled in traditional on-campus classes. Finally, a goal of this process is to encourage the development of learning communities and partnerships amongst colleagues in higher education. The following outline for executing this module is presented as a guide, not a blueprint for practice. Faculty who are responsible for designing and executing course curriculum are encouraged to augment this model to meet their specific curriculum and institutional needs. Each component of the model includes a set of tasks as well as recommended time frames upon which to be completed.

A Discussion of the Basic Module Elements

We propose a basic model that lends itself to easy adaptation to the different interests and styles of instructors who want to incorporate this interdisciplinary, integrative design into their online courses. As will become apparent, the Module Approach to Online Integrative Teaching and Learning accommodates any number of flexible design and delivery elements. The core elements listed below are those utilized in our Introduction to Political Science and Human Sexuality classes.

Design Elements Online Classes Representing Two or More Disciplines - As described by Seipel (2002), the premise of interdisciplinary teaching is to create new knowledge or deeper understanding by "drawing on the specialized knowledge, concepts, or tools of academic disciplines and integrating these pieces" (p.1). Its strength lies in the fact that "there are real-world issues and 'problems' that are broader than any single discipline and can be fruitfully examined in an interdisciplinary framework" (p. 5). Faculty interested in this approach to teaching and learning must carefully examine the ways in which their disciplines compliment their instructional objectives.

Host - The host is the primary instructor for her online course. She is the content expert in the teaching discipline. In the online environment, she is responsible for course design and student assessment.

Guest - The guest is a content expert in a discipline other than the host's. The relationship between the host and guest, as well as and the learning objectives derived from their pairing, must be clearly defined so that optimal interdisciplinary benefits accrue to the students.

Module Teams - Students enrolled in each course are placed in small groups we call Module Teams. They can be grouped utilizing a random selection tool in the online teaching platform or by the host instructor.

Engagement - Whole class and small group asynchronous discussions take place during the timeframe of the module, as defined by the host and guest instructors. Resulting from group-based reflective discussions are brief position papers exploring questions created by the host and guest instructors. Providing regular points of contact between host, guest, and students creates an active learning environment with regular engagement amongst all participants. Learning is problem-based, student-centered, collaborative, reflective, and integrative.

Closure - The module comes to its conclusion with students writing structured essays about their learning experiences. Additionally, a real-time chat session is held to allow more spontaneous exchanges between all of the module participants as a means of ending their work together.

Deploying the Module

We designed a four week module during which the political science guest enters a

human sexuality class while the psychology guest enters the political science class. We elected to open the modules during week four of our twelve week classes, allowing enough time for student schedule adjustments as well as time for students to become acquainted with their primary instructors and the course content. Each host provides a detailed explanation of the module. Additionally, the host introduces the guest with an explanation of her expertise and the role she will play during the module. At an appropriate time, the guest enters the class to provide a personal note of introduction to the students. Once the preliminaries are accomplished the module itself begins.

Phase One: Posing the Generative Question One of the primary pedagogical goals of this module approach is to expose students to unique perspectives on core elements of their curriculum. To that end, the posing of a significant generative question to the whole class serves as a springboard for the activity and a baseline as students move into the integration of specific course content. Primary responsibility for delimiting the generative question is with the host. The host and the guest may work collaboratively on the wording of the generative question to be sure it addresses their respective expertise. The generative question, by its nature, is conceptual and broad, inviting student reflection and deliberation. From it subsequent and more refined questions are generated.

Each class member posts a response to the generative question on an asynchronous discussion board created for this module. Students are prompted to read each posting to acquaint themselves with the range of views expressed by class members. The host and guest read each student's response to the generative question and may respond to provide clarification or additional direction to the discussion. We allot one week for this phase of the project.

Phase Two: Teams Discuss Sub-Generative Questions Student collaboration in reflective dialogic exchange is a key component of this module design. Because small groups facilitate discussion and collaboration, we assemble students into five groups composed of six members. We use WebCT as our online teaching platform and employ the random selection option for assigning individual students to teams.

Each team is given a question that probes deeper into the generative question that opened the module. In order to expand upon the discussion of the generative question, each module team is assigned a unique, specialized question to explore and respond to in the form of a brief position paper. Host and guest instructors prepare these unique sub-generative questions for the teams to further extend their exposure to the curriculum and promote integrative thinking and learning.

Team members have exclusive access to an asynchronous discussion board. Teams are prompted to critically reflect on their question and to investigate it by considering a range of perspectives. On this board they exchange their views and opinions, working cooperatively toward fuller delineation of their question. The guest assumes a more significant role at this point in the module, serving as both facilitator and moderator of ongoing team discussions. The guest moves in and out of each group, using her role to encourage deeper probing and wider consideration of the questions by providing a different disciplinary perspective. The host also moves in and out of the discussions to determine the extent to which students are involved in the project and their understanding of the question.

Each team prepares and posts a position paper in response to their question. The

posting occurs on the general discussion board in an area set aside by the host. All class members are encouraged to read the five position papers, though they are not required to respond to or discuss them at this time. We allot one week for this phase of the project.

Phase Three: Another Point of Integration Though significant integrative learning occurs in the first two phases of the module, we believe there is merit in taking students deeper into the interdisciplinary examination of course content. To that end, the host makes the relevant team-to-team assignments, pairing two different teams in order promote information sharing and greater co-construction of knowledge. Module team members then:

(1) Discuss their own position paper (primary) in light of the position paper of the team to which they are assigned (secondary). Both host and guest instructors can prompt meaningful discourse by querying students about the relationship of the two positions taken on the sub-generative questions. (2) Discuss the associations between the original generative question and the two position papers that respond to unique, specialized questions, looking for specific linkages and ways to integrate their learning. Module Team discussions again take place on the exclusive team discussion boards. The guest participates actively during this phase of the project, encouraging both collaborative and integrative learning. The host assumes a more passive role, reviewing the discussions and making comments or answering questions when appropriate. Returning to the main discussion board, all class members briefly describe the kinds of integration they made between the generative question, their primary position paper, and the secondary position paper. We allot one week for this phase of the project.

Phase Four: Closure In order to promote self-reflection on the teaching and learning processes employed in this module, students write thoughtfully about their experiences. Host and guest instructors use the same prompts to query their students about their engagement with the module project. Student essays focus on the ways in which interdisciplinary information enables them to better integrate core and specialized course content. Students are given one week to prepare and submit their essays to the host instructor, who will share them with the guest expert.

Finally, a chat session utilizing instant messaging provides students and both instructors a final opportunity to debrief about the module in real time. In addition to general, open-ended discussions, host and guest instructors prompt students with questions about the pace and tone of the project, trying to tap into subtle aspects of the online learning experience. Students identify areas where improvements in design or delivery of the module can be made. This chat session occurs on the last day of the final week of the module at a time conducive to module participants' schedules.

Implications

The Module Approach to Online Integrative Teaching and Learning speaks to several salient concerns in the higher education reform movement. Some of the implications are as follows:

Student Learning In what ways can the online environment promote intentional, self-aware, and purposeful learners? In a paper prepared for the Carnegie Foundation for the

Advancement of Teaching and the Association of American Colleges and Universities, Huber and Hutchings (n.d.) argue that these important goals are best met by engaging students in integrative learning opportunities (p. 1). The Module Approach to Online Integrative Teaching and Learning promotes the creative exploration of course content while introducing students to interdisciplinary perspectives through the process of collaborative reflective discourse with the instructor, a guest expert, and classmates. The culmination of the steps taken in the module is the co-construction of transformative knowledge. We concur with Huber and Hutchings (n.d.) that "learning that helps develop integrative capacities is important because it develops habits of mind that prepare students to make informed judgments in the conduct of personal, professional, and civil life" (p.1).

Student Persistence Can the high rates of student attrition in distance education online courses be reduced with the application of an approach such as the one we have designed? We offer a well-constructed integrative module containing ample opportunities for instructor-student, student-student, and instructor-instructor communications through asynchronous discussions, real-time chat sessions, and email. Research shows that instructor-student engagement through online interaction in distance education courses is the most significant factor associated with student persistence, learning, and satisfaction (Fredericksen, Pickett, Shea, Pelz, & Swan, 2000; Woods & Ebersole, 2004; Kelsey & D'souza, 2004). During the timeframe of the module, students log on often to investigate generative and sub-generative questions in whole and small group settings, engage in analytical discussions with the guest expert and their peers, and participate in evaluative writing exercises. This highly interactive environment supports student persistence, learning and satisfaction.

Student Access to Quality Courses The demand for well-rounded, independent thinkers in today's workforce has never been greater. It is the fuel driving educational reform efforts in the United States. Colleges and universities shoulder much of the responsibility to train students in the affective and cognitive skills they will need to be successful members of an increasingly globalized society. Can these goals be met in the online distance learning environment?

We believe that the Module Approach to Online Integrative Teaching and Learning provides students with opportunities to simulate some of the best practices associated with on campus class experiences. In consideration of the unique features of the online environment, we believe our module approach harnesses the strengths of asynchronous discussions, collaboration through small group work, critical reflection and thinking through the use of generative questions, and integration resulting from interdisciplinary cooperation in the co-creation of knowledge.

Faculty Learning Communities What approaches readily engage faculty as active members of the Learning College and the Learning Communities inspired therein? We posit that the module approach to online integrative teaching and learning will foster conditions by which faculty-to-faculty linkages are created and sustained. As seeds sown in a long-range design to compliment other elements of establishing faculty learning communities on campus and online, we believe the linkages and possibilities are limitless.

Recent literature suggests that faculty learning communities stimulate ongoing conversations about teaching and learning and an array of student-related issues.

Faculty learning communities promote creative interdisciplinary and integrative approaches to teaching as different perspectives on similar teaching and learning issues are shared (Bringelson & Carey, 2000). In the online environment faculty learning communities help bridge gaps in instructional technology and know-how by pairing experienced and novice instructors.

We further suggest that the ease of use of the Module Approach to Online Integrative Teaching and Learning will entice more collaboration among and between faculty from any number of disciplines, creating opportunities for such pairings as psychology and art or political science and biology. Indeed, the possibilities are endless, requiring only the creativity of the participating faculty.

Additionally, the ease of design and deployment of the Module Approach to Online Integrative Teaching and Learning makes this a cost-effective way to promote interdisciplinary partnerships. Traditional team-teaching or fully interdisciplinary course development are more difficult to effectuate, more costly to create, and more challenging to administer. We predict that the use of guest experts in online courses will increase with the recognition that this approach offers students a valuable learning opportunity. We take the notion even further by incorporating the role of the guest expert in a focused module designed to foster integrative learning.

Conclusion

Distance learners today demand high quality courses that prepare them for educational success and new workplace expectations. As online curriculum development grows, the Module Approach to Online Integrative Teaching and Learning affords faculty members a time- and cost-effective means by which they can incorporate guest experts into their courses. The benefits extending to all module participants include knowledge sharing through interdisciplinary discourse, collaborative and integrative learning involving deliberation of generative and sub-generative questions, frequent online engagement between host instructor, students, guest expert, and course content, and finally from all of these activities, the co-construction of transformative knowledge that augments and extends understanding of core curriculum concepts.

We invite our colleagues to experiment with the Module Approach to Online Integrative Teaching and Learning, tailoring it to specific wants and needs. We are confident you will find the experience refreshing and valuable. Please share your experiences by contacting us at cammy.artiz@hccs.edu and jane.cirillo@hccs.edu.

References

Bringelson, L., & Carey, T. (2000). Different (key) strokes for different folks: Designing online venues for professional communities. *Educational Technology & Society 3*, (3). Retrieved September 10, 2004 from http://ifets.ieee.org/periodical/vol_3_2000/a01.html Edelstein, S., & Edwards, J. (2002). If you build, they will come: Building learning communities through threaded discussions. *Online Journal of Distance Learning Administration, 5*, (1). http://www.westga.edu/%7Edistance/ojdla/spring51/edelstein51.html Fredericksen, E.,

Pickett, A., Shea, P., Pelz, W., & Swan, K. (2000). Student satisfaction and perceived learning with online courses: Principles and examples from the SUNY learning network. *Journal of Asynchronous Learning Networks, 4*, (2). Retrieved September, 10, 2004 from http://www.aln.org/publications/jaln/v4n2/v4n2_fredericksen.asp Huber, M. T., & Hutchings, P. (n.d.). Integrative learning: Mapping the terrain. Retrieved July 25, 2004 from http://www.carnegiefoundation.org/LiberalEducation/Mapping_Terrain.pdf Kelsey, K. D., & D'Souza, A. (2004). "Student motivation for learning at a distance: Does interaction matter. *Online Journal of Distance Learning Administration, 7*, (2). Retrieved September 1, 2004 from http://www.westga.edu/%7Edistance/ojdla/summer72/kelsey72.html Kumari, D. (2001). Connecting graduate students to virtual guest through asynchronous discussion: Analysis of an experience. *Journal of Asynchronous Learning Networks, 5*, (2). Retrieved August 14, 2004 from http://www.sloan-c.org/publications/jaln/v5n2/v5n2_kumari.asp Seipel, M. (2002). Interdisciplinarity: An introduction. Retrieved August 30, 2004 from http://www2.truman.edu/~mseipel/Interdisciplinarity.pdf Woods, R. & Ebersole, S. (2003). Becoming a communal architect, in the online classroom: Integrating cognitive and affective learning for maximum effect in web-based learning. *Online Journal of Distance Learning Administration, 6*, (1). http://www.westga.edu/%7Edistance/ojdla/spring61/woods61.htm

Researching Theatre of the Oppressed: A Scholarship of Teaching and Learning Project

Suzanne Burgoyne
Professor of Theatre
University of Missouri - Columbia
Columbia, Missouri, USA

Sharon Welch
Religious Studies, Women and Gender Studies
University of Missouri - Columbia
Columbia, Missouri, USA

Karen Cockrell
Department of Educational Leadership and Policy Analysis
University of Missouri - Columbia
Columbia, Missouri, USA

Helen Neville
Department of Educational Psychology
African American Studies and Research Program
University of Illinois
Urbana-Champaign, Illinois, USA

Peggy Placier
Educational Leadership & Policy Analysis
University of Missouri - Columbia
Columbia, Missouri, USA

Meghan Davidson
Counseling Psychology (Doctoral Candidate)
University of Missouri-Columbia
Columbia, Missouri, USA

Tamara Share
Counseling Practice
Durham, North Carolina, USA

Brock Fisher
Department of Theatre Arts
Bethel College
Mishawaka, Indiana, USA

Abstract

Augusto Boal's Theatre of the Oppressed (TO) has become a widely-used interactive theatre form. In this article, we analyze the responses of students who participated in a TO course. As the course progressed, the class broke into two opposing factions. While the instructor, who was teaching her first TO class, acknowledges that she made major mistakes, mistakes can sometimes provide a significant source of learning. Our qualitative analysis of student class journals suggests that the issue of student difficulty in dealing with difference was a significant condition for the polarization of the class.

We not only need to use our terror of differentiation but our terror of conflict. Americans are plagued with the disease of agreement. In the theatre, we often presume that collaboration means agreement. (Anne Bogart)

Introduction

Augusto Boal's participatory Theatre of the Oppressed (TO) is practiced widely. However, little research has been published on the impact of TO experiences--or on participants' responses to difficulties that can arise when doing TO work. In fall 2000, Burgoyne and an interdisciplinary team set out to research the impact of TO on students' understanding of oppression. It was Burgoyne's first TO class, and a difficulty arose regarding the level of risk students were willing to take. The class broke into two opposing factions over the selection of rape as a topic for Image Theatre. While Burgoyne acknowledges that she made major mistakes in handling the choice of topic, mistakes can sometimes provide a significant source of learning. Indeed, as Carnegie Scholar Randy Bass argues, "Changing the status of the problem in teaching from terminal remediation to ongoing investigation is precisely what the movement for a scholarship of teaching is all about" (1999). Burgoyne and her colleagues decided to transform a problem into an opportunity to learn why the difficulty arose. We used a qualitative method, grounded theory, to analyze student reactions to the incident, as recorded in their class journals. Our analysis suggests that the issue of difference--and student problems in dealing with difference-was a significant condition for the polarization of the class.

Background

We offer a brief explanation of Theatre of the Oppressed (TO) for readers unfamiliar with the form. TO was developed by Brazilian director/playwright Augusto Boal, drawing upon fellow Brazilian Paolo Freire's Pedagogy of the Oppressed. An engaged artist struggling against the Brazilian dictatorship in the sixties, Boal was arrested, tortured, and exiled in 1971. He had begun by producing propaganda-type theatre, but under the influence of Freire turned to doing theatre with instead of for audiences. TO involves participants, called spect-actors, in theatre exercises intended to empower participants to recognize, analyze, and overcome social oppression. TO's ultimate goal is action in the real world, for which the theatre experience serves as a kind of "rehearsal." Instead of telling people how they should solve their problems, TO practitioners guide a particular group in exploring a social problem relevant to that group (e.g., racism, a labor dispute, gender issues) and finding their own solution.

TO has an "arsenal" of theatre games and techniques which engage the body as well as the mind and provide opportunities for active, experiential learning. Cartei and Picher, founders of the Theater of the Oppressed Laboratory at NYU, propose that TO "techniques are practical pedagogical tools that can be integrated into the framework of any humanities or social science program," fostering critical thinking and active engagement (n.d.). Since TO deals with the uses and misuses of power, many of the games metaphorically explore power relationships. For instance, "Columbian Hypnosis" begins with participants in pairs leading each other with a hand in front of the partner's face, and ends with a tangled web of leaders and followers. The exercise may stimulate

discussion of how power flows in institutions (especially if a small move in the web's center causes whiplash for those on the fringes). In addition to basic TO theatre games, our class explored three major TO techniques: Image Theatre, Forum Theatre, and Rainbow of Desire.

In Image Theatre, spect-actors create living statues with other participants. The human clay is sculpted into an image of an oppressive situation related to a topic of interest to the group; then an "ideal" version and steps for causing societal change are explored. The images present an issue in a vivid, memorable way. For instance, shortly prior to the U.S. attack on Iraq, another TO class explored the current relationship between the American government and its citizens. One negative image depicted three citizens sitting on the floor, alternately with hands over eyes, ears, and mouth. Behind the citizens stood soldiers pointing guns.

In Forum Theatre, a scene developed through improvisation is performed, and the spect-actors enter into the play to try out solutions to the oppression depicted. Our TO class worked with an Education class to create Forum Theatre pieces dealing with multicultural issues in education. One piece, for example, depicted a mandatory standardized test which oppressed students: the Latina student who does not speak English, the African-American who finds the material irrelevant to her life, the student who objects to questions on evolution for religious reasons, etc. After an embattled teacher protagonist failed to solve the problem, the play was repeated, with spect-actors calling out, "stop!" and taking over the teacher's role.

Boal developed Rainbow of Desire, a therapeutic process, after working in countries where he found oppression to be more internalized than overt. In the basic Rainbow exercise, a spect-actor re-enacts a real-life conflict and identifies a variety of different "desires" he/she experienced. Other members of the group then embody these desires. The protagonist dialogues with his/her own desires and negotiates what role he/she wishes each desire to play in the conflict. One of the most moving moments in our TO class showed a teaching assistant re-enacting a conflict with a student who consistently missed class. One of the "desires" the protagonist identified was his pride in himself as a teacher. While talking with his pride, he realized that he did not want that part of himself involved as he tried to solve the problem with his student.

For further information on TO, the reader is referred to Boal's books in References. We encourage the novice to begin with Games for Actors and Non-Actors. For a concise explanation of applications of TO to the classroom, see Burgoyne (2004). We also encourage a visit to the website of Pedagogy & Theatre of the Oppressed, an organization which holds annual conferences and hosts workshops by Boal and other TO practitioners: http://www.unomaha.edu/~pto. The International Theatre of the Oppressed Organization publishes a newsletter and is developing an archive of projects and research: http://theatreoftheoppressed.org/en/index.php?useFlash=1.

Literature Review

The published literature on TO consists primarily of case studies, ideological analyses, and interviews with Boal (e.g., Schutzman and Cohen-Cruz, 1994). Even in the field of Education, there is little empirical research. Kaye and Ragusa, for example, report their use of TO "to analyze complex social issues," especially multiculturalism, "within the

context of teacher education coursework" (1998, 2); however, their paper does not assess the techniques. Vierk (1997) applied TO as a means of stimulating critical thinking in composition courses; but her study lacks rigor. Brown and Gillespie argue for the effectiveness of TO in a higher education setting as a means of assisting faculty and administrators to "hone our skills, courage, and collective responses to resist the sources of our moral distress" (1999, 39); their argument is supported by examples rather than assessment. Carlebach and Singer state that students found using TO in service-learning projects "empowering" (1998, 197) but offer no supporting evidence other than ad hoc student comments and course evaluations. There are some relevant dissertations (e.g., Blanco, 2000) and more in the works, but the voice of the participants in TO has gone largely unheard. One recent exception is Negri-Pol (2004), who studied TO's impact on bicultural development of adult Latinas in a teacherpreparation program.

Description of the Study

The course was designed as a training program to teach TO techniques--an extended version of training workshops led by Boal. Fifteen students enrolled in the course at the University of Missouri-Columbia in Fall 2000, nine graduate students and six undergraduates; all but one were Theatre majors. Of the fifteen students, twelve agreed to participate in the research.

Five University of Missouri-Columbia faculty and six graduate students conducted the study. Burgoyne had been awarded a 2000/2001 Carnegie fellowship for the scholarship of teaching and learning, and she recruited an interdisciplinary team (Members from Theatre, Educational and Counseling Psychology, Religious Studies, and Educational Leadership and Policy Analysis).to work with her.

The methodology for analyzing data used a grounded theory approach (Glaser, 1978; Glaser and Strauss, 1967). Based in a sociological framework known as symbolic interaction (Blumer, 1969), grounded theory is a qualitative methodology (Allen, 1987) developed specifically for the study of social psychological phenomena (Bowers, 1988). The data is coded to reveal dimensions of the phenomenon (variables) and then matrixed to explore relationships among dimensions. Researchers identify core categories and generate a theory statement which arranges these categories into the grounded theory paradigm: what central problems, actions, or strategies occur; under what conditions; with what consequences; for whom?

The methodology examines a phenomenon from the point of view of the participants. Therefore, the following analysis reveals the perceptions of the students and is based on close examination of their journals. The authors do not necessarily concur with all opinions expressed in student quotes used to illustrate the analysis.

The Image Theatre Incident

During the first few weeks, the class engaged in TO games, community-building exercises. After several Image Theatre sessions, the instructor proposed that the class choose a more challenging topic, rather than "playing it safe." Someone proposed rape. While some students seemed enthusiastic, others protested. Another student proposed

the topic of violence. The instructor asked the class how they wanted to choose--they suggested voting. However, the vote was split down the middle (rape vs. violence). The instructor abstained, and one of the students decided to change his vote to rape.

The group started working on the Image Theatre piece, but the tension in the room was palpable. The first image sculpted showed a man standing over a woman lying on the floor. The group discussed that image, and created several others. During the work, two students used their "right of egress" and declined to participate. [The term "right of egress" comes from creative drama (see Kent, 1994). Although the process is not usually used in TO, the instructor established the right of egress as a means of encouraging students to take responsibility for their own safety.]

When the class processed the exercise, students said they had been focused on the negative reactions of some class members. One said she was upset that we were doing unsafe work. Another retorted that everyone had the right of egress, and each person was responsible for taking care of herself. Class ended with tensions still high (Burgoyne, 2000).

As the course continued, it became clear that the topic of rape had split the class into "pro imaging" and "anti imaging" factions (hereafter referred to as "pro" and "anti"), each hostile to the other. The division crossed gender lines so could not be attributed to gender-specific attitudes.

The Analysis

Our research group decided to investigate the "Image Theatre meltdown." Why did the class division occur? What were its consequences? The literature on TO, aside from Boal's books, is sparse and does not cover such occurrences [one exception being Salverson, who discusses a TO workshop on racism in which a diverse group of participants divided in two on the basis of color (Schutzman and Cohen-Cruz, 1994)]. However, one of Burgoyne's Carnegie fellowship colleagues, Richard Gale, an experienced TO practitioner, told her such breakdowns commonly happen in a TO class as students confront their willingness to take risks. Therefore, we thought that analyzing the incident could generate useful insights.

Our analysis of the student journals suggests that an important condition for the class reaction to the Image Theatre incident is the issue of difference--and the students' problems in coping with difference. Students' perceptions of significant differences include: 1) attitudes and beliefs; 2) understanding of the nature and goals of Theatre of the Oppressed; 3) willingness to take risks. In attempting to cope with the feelings evoked by the experience, common student strategies involved justifying their own position and blaming their opponents. More than one student mentioned classmates' inability to hear opposing viewpoints, and their lack of respect for those who held different opinions. As a result of this division in the class, many felt the environment of safety and trust had been compromised. As the semester proceeded, other class experiences restored a collaborative atmosphere.

Many students commented on the diversity of opinions in the class, including differing ideas of what is oppressive. (All quotes from students, who have been given pseudonyms, are from their class journals.) As Martin observed, "When there is a group as diverse and middle class as our class (diverse in ideas, middle class in economy) it is hard to get the group unified for a forum theatre piece. Everyone has different issues"

(Nov. 30). Cindy commented, "I don't feel that many people today in the US believe in oppressive forces that affect us all, only in the ones that affect them or their group individually. It is a unique problem for our class to deal with, in that we do not all have a cause that we are fighting for as an understood construct of our class coming together" (Nov. 6). Thus, the lack of a generally-shared oppression to address seemed to work against class cohesiveness.

Another significant difference involved varying student understandings of the nature of TO, in spite of extensive assigned readings in Boal's books. James reflected: "Theatre of the Oppressed means different things to different people in our social construct. And until we can arrive to a consensus, I do not think we can move forward in a healthy way" (Sept. 21).

One difference in student definitions of TO seemed related to goals: whether TO is meant to address social issues only or also psychological issues. As Doug Paterson, founder of the Omaha Center for Theatre of the Oppressed, points out, "Boal is pretty clear on this. Forum and Image Theatre are intended to begin with individual experiences . . . and to take the subject from the 'I have or know of this oppression' to 'we all have or know of this oppression.' This is intended to 'socialize' the issue, to take it from the individual to the collective . . . Rainbow goes in the other direction. It focuses on individual oppression, the personal experience of oppression in its specific manifestation in one individual. Yet while it does focus on the individual oppression, at the same time it never says this individual problem doesn't have social relevance and causes" (2003).

The "anti" faction argued that the issue of rape trespasses into potentially damaging psychological territory and should not be explored. The "pro" group felt that their opponents were ignoring the social dimensions of rape. Felicia, for instance, responded: "Rape is a social problem, a group problem. But comments were made that shifted the exploration of rape from a social problem to a personal problem. Makes me want to be a raving feminist marxist" (undated entry).

A second difference in definitions has to do with whether or not TO requires emotional involvement. James, an "anti" student, argued against emotional involvement, suggesting that "some people are perfectly willing to let their emotional baggage hang out in class while others are not. And that, I think, is the crux of the problem" (Sept. 21). Laura, a "pro" student took the opposing view: "A few people in the class seem to think it's wrong to conjure up any kind of emotion with these exercises. Then, what are we doing? We can't separate ourselves from oppressive issues, and if we could, then we probably wouldn't need to do this kind of work" (Sept. 21). Another "pro" student, Georgina, felt that unpleasant emotions might serve a purpose: "I think that TO is supposed to be uncomfortable so that a change of consciousness can take place." (Sept. 21).

A third difference in student definitions concerns whether TO solely involves helping society (others) change or requires that the individual TO student herself change. A "pro" student, Laura, raised the question: "Are we looking to Theatre of the Oppressed to help us understand and explore our world, or are we only learning the techniques to help other people?" (Sept. 21). An "anti" student, James, defined TO as "a tool which theatre moguls can utilize to incite social change and/or awareness" and not a means of changing the individual (Sept. 21).

Differences in student definitions of acceptable risks also played a role in the division of the class. Jan explained, "I was opposed to doing this topic [rape] because I thought it was a bit too risky" (Sept. 21). Another "anti" student, Marge, felt that the change from non-risk to high-risk topics was too abrupt: "I think we went from being 'easy' to being 'horridly difficult' without stepping on an in-between stage." Marge also observed that her definition of safety was not shared by the whole class: "To me, . . . safety means that we can trust others, that we will not be put into positions that we find scary or uncomfortable in any way. To others, safety meant something different" (Sept. 21). A "pro" student, Georgina, proposed a different definition of acceptable risk: "It's like my classmates refused to come face to face with their fears--therefore becoming their own oppressor. This to me is contrary to the basics of TO, facing and coming to terms with oppression (no matter how ugly it may be)" (Sept. 21).

Differing definitions of TO led to differing expectations about the course, arousing frustrations on both sides. Both "pro" and "anti" students accused their opponents of interfering with their education. Phyllis complained that she felt "frustrated" with the "anti" classmates: "I feel cheated out of the class's full potential. Going into this semester, I had anticipated a lot of down & dirty imaging & discussion of social and political issues. Instead, I don't feel like we've really gotten close to the core of anything" (Sept. 18-22). On the other side of the debate, James found the rape topic threatening: "I cannot participate if I feel threatened. And if I cannot participate, then I cannot acquire what it is I am here for: my education" (Sept. 21).

The division in the class aroused intense emotional responses. Cindy reflected, "I agree with Phyllis when she said there seemed to be animosity between group members" (Sept. 21). Student perceptions suggest that each group, "pro" and "anti," felt oppressed by the other.

While a few students attempted to understand their opponents' point of view, the journals reveal the majority defending their own position. Some entries comment on the inability of classmates to hear a different viewpoint. Marge, an "anti" student, perceived that some classmates "didn't want to listen," and observed: "I felt like everyone (me included) was only hearing what they wanted to hear" (Sept. 21). It could be hypothesized that the "social" vs. "psychological" debate hinged on a misunderstanding: that the "anti" faction was saying that rape as an issue is too personal/psychological, whereas the "pro" faction heard them saying that rape is only personal/psychological.

Some students reported that the hostility they felt in class prevented them from speaking openly. Cindy, who had done work on "women's health issues," said, "I did not feel like it was safe for me to say what I know, or have taught others, in that class period" (Sept. 21). Other students questioned their opponents' motives. Martin expressed disappointment at classmates' resistance to "finally tackling an issue" he considered significant, saying, "sometimes I think that people protest things just to stand out and get attention" (Sept. 21).

Feelings of guilt and ambivalence characterized some students' responses. Louise, a "pro" student observed, "I want us to push, to explore. But I don't want to hurt anyone. I'm feeling guilty, on two fronts. Guilty for not pushing & also guilty for being part of something that may have hurt one or more persons" (Sept. 21). Georgina, another "pro," reflected, "I felt bad about having contributed to making my classmates feel uncomfortable. . . . I don't think people should be forced to do anything in TO, yet I

resent certain members of the group completely quitting the process" (Sept. 21). Marge, an "anti," said she felt "responsible" for everyone's upset (Sept. 21).

Members of both "pro" and "anti" factions reported feeling as if the other faction were looking down on them. A "pro" student, Felicia, declared her anger at "anti" students who she thought took "a position that postures a moral superiority, an intellectual disjunct, a refusal to play" (undated entry). Marge, an "anti" student said, "I feel like those of us who did not participate were looked down on as not being full participants in the exercise, when in actuality, I was fully participating by egressing. Suddenly, the right of egress became taboo . . ." (Sept. 21). An inability or unwillingness to respect the other person, in spite of differences, seems to lie at the heart of the divisive experience. Marge notes this point being made by a classmate: "[He] said, 'Yes, but we all have to respect one another in this class, whether we agree or disagree'" (Sept. 21).

Issues of "difference" continued to surface in the journals. After Image Theatre, the class moved to Forum Theatre, choosing issues and dividing into small groups to develop scenarios. The topics selected were: sexual harassment, the oppression of non-smokers/drinkers, and the oppression of smokers/drinkers. Some "pro" students felt the class was still playing it safe. Carl voiced his frustration: "smoking/drinking v non-smoking/drinking are not issues of oppression if compared to other issues such as class and race discrimination" (Oct. 5). However, the "duelling" Forum Theatre pieces on smoking/drinking ultimately seemed to have a beneficial effect on student attitudes towards difference. Phyllis, a rabid anti-smoker, found that viewing the "oppression of smoker/drinkers" piece gave her a new outlook: "For the first time, I was able to see the other side of the coin. This is a very big thing, because I never sympathized with them before" (Oct. 9-13). Cindy reflected: "I liked that the complexity of the issue made many people in the class understand more of the oppression each group felt, and changed their attitude to be much more understanding" (Nov. 9). In the last third of the semester, the class indicated their willingness to try Rainbow, Boal's therapeutic technique, which proved to be almost everyone's favorite. Martin pointed out: "Rainbow does not require the whole group to agree that a principle is true, it does allow a group to empathize with an individual" (Nov. 30). While some students thus suggested that Rainbow permitted the class to avoid confronting issues of difference, others implied that Rainbow impacted their tolerance for difference. Laura said, "I learned that different things oppress me than oppress [the Rainbow protagonist] and she handles oppression in a different way, but it's not wrong" (Dec. 5). Even James, one of the most vocal opponents of psychological applications of theatre, commented, "Today, I saw the first real benefits of drama therapy. And I did not feel threatened or unsafe" (Nov. 30).

Rainbow seemed to bring the class together as a community. James credited the Rainbow work with making the class environment "safer somehow. . . . I mean, when, during processing, has the class not debated heatedly or outright bitched about something that happened? Well, again since we started RB. Something about the experience of working through the project(s) has allowed the class to feel like they've really gotten somewhere. Like everyone has worked through it . . . been in the driver's seat (in spirit if not as the protagonist), nailed down the problem as a group and figured out a solution" (Dec. 5). Georgina reacted similarly: "I think that anyone who experiences TO can learn to deal with the world more effectively. The sense of community that is engendered in the group work, especially Rainbow, is a valuable people skill. . . . How often does a group of strangers come together for the purpose of helping one person feel better about one part of their life? Not very often, and I must say that it has been a

pleasure to be a part of such a giving and helpful community" (Dec. 12)

In their final journal entries, some students referred to the issue of "difference" and the sense of cohesiveness that the group eventually achieved. Georgina observed, "The activities in TO have caused me to experience a lot of self-revelation, and also sensitized me to the views of people whom I don't agree with" (Dec. 12). Cindy, who earlier had felt unable to speak out, acknowledged, "I feel that because people felt able to say what they felt (mostly) we had created the 'safe' environment that was discussed closer to the beginning of the class" (Dec. 12).

Discussion

Our analysis suggests some strategies that might be useful for avoiding divisiveness in future TO courses. One option might be to homogonize the class by basing it on announced exploration of a particular social issue. Another option might involve the instructor's warning students about the likelihood of TO engendering some emotional discomfort before issuing consent cards. Emphasizing the importance of respect for others, in spite of differing views, might be an additional instructor strategy.

The instructor also recognizes that she made mistakes. Given the vehement opposition to the topic of rape, it was unwise to proceed, even with a majority vote. Indeed, experienced TO practitioners Doug Paterson and Richard Gale observe that consensus rather than vote is the usual procedure for selection of topics in TO. Gale says, "In almost every TO workshop I have attended and led, the central images have been selected not by majority vote, but by consensus. Everyone must agree to the theme for it to be enacted. Because the point of TO is to investigate possible change actions for the group (not for individuals alone) the entire group must be on board" (2002). In the training workshops led by Boal which the instructor attended, however, topics were selected by vote of the group.

Allowing the class to image the moment of rape itself was also an error. As Boal points out, one must distinguish between oppression and aggression: "when the model presents an aggression, the only answer is resignation because all the possible courses of action depend exclusively on physical strength" (1992, 226). Boal argues that TO, which is meant to empower the spect-actor, should depict moments of choice, when solutions are possible. A few of the journal entries reveal students reflecting on this point. Louise, for instance, says, "Why represent the image of the actual act itself? There's no ideal for that. We are helpless. The protagonist has no alternatives" (Sept. 21). If the topic of rape were to be explored, focusing on a choice point such as "dealing with the aftermath" would help.

Given that the class had been dealing with low-risk topics, it is also clear that, as Marge observed, the shift to a rape as a topic was too abrupt. Topics could have been found which challenged the students but made the progression more gradual.

Theories of social violence also may provide insight into the kind of division that occurred in the class. Rene Girard, a leading theorist of social violence, analyzes a phenomenon that he describes as the "double bind" and "mimetic doubles." Conflict between individuals and groups can escalate to the point where they become mirrors of the other, each justifying their violence against the other as righteous violence (Girard,

1977, 79). Theophus Smith describes the phenomenon: "Doubles are rivals whose mutual desire to displace the other renders them increasingly like one another as their conflict escalates. At the furthest extreme of mutually desired homicide the essential identity between antagonists is complete: each desires sole survival on the condition of the other's annihilation." (1994, 197-98).

Girard claims that the only way that societies have found to escape the 'double bind' is through the displacement of violence onto a scapegoat: former enemies join in vanquishing another enemy, one who is seen as a threat to the survival of both (1977, 83). Wallace and Smith (1994) have argued that there are other ways of escaping the 'double bind'. They point to the importance of disclosing the false projection of guilt on any scapegoat. Their wager is that if the antagonists can see that they have become their enemy, and if they can see that the scapegoat is extraneous to their conflict, then it may be possible to stop the spiral of violence. Smith argues "that what is actually transformative is an exposé of the scapegoating process itself" (Wallace and Smith, 1994, 249).

In the Theatre class, we saw the emergence of the 'double bind' and 'mimetic doubles.' When serious conflict broke out, the class was quickly polarized, each side seeing the other as not only wrong, but dismissive of their claims. The two sides did not understand each other as offering perspectives worth considering, but as taking positions that made genuine, healing TO work impossible.

Taking a cue from Girard, Wallace and Smith, we now see that it would be a valuable exercise to bring to consciousness the polarization that has occurred. Iinstead of seeking ways to avoid the kind of divisiveness evoked by the incident, we should consider how the instructor might transform the event into a "teachable moment." Using Image Theatre techniques to explore the dynamics of the situation might have helped the class understand each other's perspectives and move on together as a community. For instance, each group might image the oppression they felt and the choice point at which that oppression occurred. From those choice points, alternative steps to prevent the oppression could be explored, leading towards an image of their "ideal" class created by all the students. Since our analysis of the journals reveals that the two groups had different ideas about what they wanted from the course, the process of imaging the "ideal" class might foreground those differing assumptions, making it possible to negotiate an approach to further work acceptable to everyone.

The analysis of this "problem in teaching" allowed us to focus on the students' perceptions of what happened in the class, rather than assuming we knew what was going on, and highlighted possibilities we wouldn't have thought of. The goal of TO is to empower participants, to give them a voice, and this scholarship of teaching and learning study allowed us to hear the student voice more clearly--and to learn from it.

Additional Research on TO

Our research in 2000/2001 also involved a collaborative project in which the TO class and an Education class for pre-service teachers created Image and Forum Theatre projects together (see Burgoyne, et. al., 2003). We administered a modification of Heppner and O'Brien's Guided Inquiry Survey, asking participants if their their thoughts about oppression changed since taking the class, and if so, in what ways. Twelve

Theatre students and thirteen Education students completed the survey, which was coded by the team. The overwhelming majority (84%) stated that their understanding of oppression had changed to some degree. Most students said they gained a deeper intellectual understanding of the concept of oppression. For example, one student said, " I am more aware of how people get oppressed and of how often it is taking place in everyday life." A number of students also identified increase in personal awareness, for example: "I now know that oppression occurs to me and I have oppressed others not knowing I was."

We also conducted two 90-minute focus groups in the semester following the TO class; five Theatre students and one Education student participated. Analysis of the focus groups supports and expands upon data from the survey.

A consistent theme emerging in both focus groups is students' belief that TO provides individuals with more options regarding actions to take in oppressive situations. Phyllis, for instance, said, "when I am in a situation where I am feeling oppressed or I feel like there is some injustice going on in my life, I have caught myself now stopping and thinking . . . there are solutions, there are things that I can try, there are things that I can say, tactics I can take." Speaking in the other group, Louise also reported, "[TO] makes me aware of options, it makes me think about options, that there is not only one way." In the sense that their TO experience made students aware of the possibility of alternative strategies in the face of oppression, it fulfilled the TO goal of empowering participants. So although the teacher made mistakes, and although the TO students struggled at times, the majority of them learned something of value about their world-and themselves.

References

Allen, D. (1986). Nursing research and social control: alternative models of science that emphasize understanding and emancipation. *Image 17*, 59-65.

Bass, R. (1999). The Scholarship of Teaching: What's the Problem?, *Inventio* [online journal] 1, no. 1. http://www.doiiit.gmu.edu/Archives/feb98/randybass.htm

Blanco, J. F. (2000). *Theater of the Oppressed and Health Education with Farm Workers: A Primary Research Project*. Ph.D. diss. Florida State University.

Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Berkeley: University of California Press.

Boal, A. (1992). *Games for Actors and Non-Actors*, trans. A. Jackson. New York: Routledge.

Boal, A. (1998). *Legislative Theatre*, trans. A. Jackson. London: Routledge.

Boal, A. (1995). *Rainbow of Desire: The Boal Method of Theatre and Therapy*., trans.A. Jackson. London: Routledge.

Boal, A. (1979) *Theatre of the Oppressed*, trans. C. A. McBride and M.-O. L. McBride. New York: Urizen.

Bowers, B. (1988). Family perceptions of care in a nursing home. *The Gerontologist* 28, 3.

Brown, K.H. and Gillespie, D. (Sept./Oct. 1999) Responding to moral distress in the university: Augusto Boal's *Theatre of the Oppressed*, *Change*, pp. 35-39.

Burgoyne, S. (Fall 2000). Instructor's journal, TO class.

Burgoyne, S. (Winter 2004). Engaging the Whole Student: Interactive Theatre in the Classroom. *POD Essays in Teaching Excellence* v. 15, no. 5.

Burgoyne, S., Cockrell, K., Neville, H., Placier, P., Welch, S., Davidson, M., Share, T., and Fisher, B. (Dec. 2003) Theatre of the Oppressed as Pedagogy, *National Teaching and Learning Forum* 13, no. 1: 4-6. http://www.ntlf.com/html/pi/v13n1/carnegie.htm

Carlebach, S. W., and J.A. Singer. (1998) Applying Service-Learning to the Problem of Prejudice: A Psychology and Theater Course. *With Service in Mind: Concepts and Models for Service-Learning in Psychology*, ed. G. Bringle and D. K. Duffy. Washington, DC, American Association for Higher Education.

Cartei, C. and Picher, M.-C,. (n.d.). What Is Theatre of the Oppressed: The Theatre of the Oppressed Across the Curriculum. http://www.toplab.org

Freire, P. (1998) *Pedagogy of the oppressed*, trans. M.B. Ramos. New York: Continuum.

Gale, R. (22 Sept. 2002). Electronic communication.

Girard, R. (1986). *The Scapegoat*, trans. Y. Frecerro. Baltimore: The Johns Hopkins University Press.

Girard, R, with Ourgoulian, J.M., and Lefort, G. (1987). *Things Hidden Since the Foundation of the World*. Stanford: Stanford University Press, 1987.

Girard, R. (1977). *Violence and the Sacred*, trans P. Gregory. Baltimore, The Johns Hopkins University Press.

Glaser, B.G. (1978). *Theoretical Sensitivity*. Mill Valley: Sociology Press.

Glaser, B.G, and A. Srauss. (1967). *Discovery of grounded theory*. New York: Aldine.

Heppner M. J., and K. M. O'Brien. (1994). Multi-cultural counselor training: An examination of students, perceptions of helpful and hindering events, *Counselor Education and Supervision* 34, pp. 4-18.

Kaye, C., and G. Ragusa. (1998). Boal's Mirror: Reflections for Teacher Education. ERIC, ED 419787.

Kent, A. (1994). "I Was There!": Creative Drama for Social Change. *Theatre Topics* 4, 65-73.

Negri-Pol, L. L. (2004) "Theatre of the Oppressed: Un camino hacia poder y desarrollo de las Latinas." M.A. thesis, Pacific Oaks College.

Paterson, D. (7 Jan. 2003). Electronic communication.

Schutzman, M., and J. Cohen-Cruz, eds. (1994). *Playing Boal: Theatre, Therapy, Activism*. New York: Routledge.

Smith, T. (1994). *Conjuring Culture: Biblical Formations of Black America*. New York: Oxford University Press.

Vierk, J.M. (1997). The use of pedagogy and theatre of the oppressed and interactive theatre exercises in the community college composition classroom. Ph.D. diss., University of Nebraska.

Wallace, M., and T. Smith, eds. (1994). *Curing Violence*. Sonoma, CA: Polebridge Press.

By Teaching You Will Learn: Journals Facilitate Student and Faculty Learning

Joan Benek-Rivera, PhD, SPHR
Department of Management
Bloomsburg University
Bloomsburg, PA 17815

Abstract

Writing skills remain important for college graduates given technology like e-mail and text messaging. Assignments typically include essays, reports, and case analyses. Journals are a variation that engages students by having them reflect on learning. In the 4-step "process wheel" technique presented, students write about an activity and process it based on their thoughts, feelings, and application. The objectives of these journals are to enhance skills in writing and self-disclosure, and to facilitate transfer of learning. Journals also facilitate writing across the curriculum. Both students and faculty learn from journals: students increase their self-awareness and understanding of material, and faculty receive honest feedback about students' learning.

…By learning you will teach; by teaching you will learn… I adopted this Latin proverb as a motto years ago and it is the basis of my teaching philosophy. As we prepare for our careers as professors, we often don't realize at the time the amount of our learning that continues to occur well after we have received those important graduate degrees. By using "process wheel" journals in my classes, I have found that faculty can learn as much, or more, from what our students learn, as they learn from us.

How often do we stop to think about what students are really taking away from courses besides the grades and credits? What indicators do we look for to decide when it is time to replace a lesson with something new? How often do we discover, sometimes by accident, that students missed the point of what we were trying to teach? If and when we make that discovery, sometimes it occurs too late, when there are no more opportunities to re-teach the material. How many times do we grade an assignment that is personally moving, intrinsically rewarding, or even one that offers opinions we totally disagree with- but still deserves an A? Based on my use of "process wheel" journals over the last 6 years in four different courses, I have found that journals benefit students and instructors alike. Students not only increase their understanding and self-awareness, but also come to the realization that they have learned something they can transfer to their personal and/or professional lives. Journals provide unanticipated outcomes to faculty who often learn that what we thought we taught may not be what the students learned, or that their learning was more powerful than we could have imagined. In any case, journals are an excellent source of honest feedback that may directly impact our future teaching. The purpose of this article is to outline a 4-step "process wheel" technique for student journal writing. Benefits of journal assignments to both students and faculty are also discussed.

Why Assign Journals?

The objectives of "process wheel" journals are two-fold. First, students develop skills in written communication and self-awareness via self-disclosure. Self-disclosure activities improve one's self awareness, and self-awareness is a critical aspect of emotional intelligence. It is more powerful in predicting success in life than is intelligence

(Goleman, 1995). Second, students apply their classroom learning to situations in their work and personal lives; in other words, students learn by analyzing their experiences (Allen and Enz, 1987). A by-product of this objective is to reinforce understanding and retention of concepts.

With the increasing emphasis on outcomes and competencies of college graduates, skill development exercises provide a means to this end. Whetten and Cameron (2005) outline a 5-step approach to skill development that extends Social Learning Theory (Bandura, 1977). Their model includes skill assessment, learning of principles, case analysis, practice exercises and simulations, and, finally, application exercises to facilitate transfer of learning. Journal writing is an easy-to-use application activity. It offers students an opportunity to transfer learning to everyday practice and life activities. For example, in "process wheel" journals students formulate a specific action plan to implement in the near future. Learning also occurs from insights in journals, a form of feedback to self.

Journals provide a vehicle for implementing writing across the curriculum, as a writing to learn assignment (Cox, Bobrowski, & Spector, 2004). Students learn from writing by explaining ideas to themselves, posing questions in their writing, and enhancing their critical thinking and problem solving skills (Allen & Enz, 1987; McLeod & Maimon, 2000). Journal writing helps develop skills of introspection and reflection (Coghlan, 1993). By reflecting on their feelings, students are able to personalize course concepts in a familiar context, thus enhancing their understanding and retention (Vargo, 1997).

Journal assignments may be used to enhance the effectiveness of other instructional methods (Allen & Enz, 1987; Kalliath & Coghlan, 2001), like readings, lectures, and case discussions. According to Kalliath and Coghlan (2001), these traditional methods emphasize cognitive appraisal of information. With the addition of action-reflection processes, like writing journals, students move to a higher level of learning that Kalliath and Coghlan call meta-cognitive learning.

In a similar vein, Epstein (1994) outlines two modes of information processing: experiential and rational. The former processes stimuli from the external, social environment, and the learning becomes part of long-term memory. The rational mode is logical and structured and becomes part of short-term memory. He asserts that "information gained through personally meaningful experience is more effective at changing feelings and behavior than impersonal information acquired from textbooks and lectures" (Epstein, 1994, p. 711). Narratives such as journals appeal to the experiential mode because they are emotionally engaging and personally convincing. Students can more readily apply insights gained from experiences than from abstract knowledge. The general nature of journals makes them suitable for use across disciplines, and in courses at different levels.

Implementation

This method is an adaptation of the "process wheel" technique used to process lessons in diversity training at the National Multicultural Institute (NMCI, 1996). The facilitator leads the trainees through an in-depth discussion of their thoughts, feelings, and actions during a given lesson. As a trainee of NMCI, I found the "process wheel" to be a simple yet powerful method and decided to use it in university courses I taught. Because it was

rather challenging to engage an entire class of college students in such a discussion, I opted for a written variation with students processing their learning in journals. Initially I introduced these journals in a Managerial Communications course since writing is an important communication skill. It was easy to see that these journals could be used in other classes, and I have used them successfully in a number of graduate and undergraduate courses.

The "process wheel" journal has four elements: Doing, Thinking, Feeling, and Application. The journal is typically 1-2 pages. Students process learning by exploring their thoughts and/or feelings about the lesson and formulating an application plan for transfer of the learning. Allen and Enz (1987) offer several variations of journal writing exercises, one of which is a process log. The "process wheel" journal described here expands on the process log where students record their thoughts and experiences while working on a project. This journal technique corresponds in part to Kolb's (1984) experiential learning cycle: the opening paragraph describes a concrete experience; paragraphs 2 and 3 concern reflection, and the final paragraph is a form of experimentation where students plan to use insights in future situations.

Opening Paragraph: Students describe the featured lesson and what they were doing. They provide details about who was involved, what was happening, where the activity occurred, when, why, or how. They are encouraged to provide details that will help them recall the activity in the future. For example, they are instructed to not just say they watched a video, but to provide specifics about the video (course topic and other any pertinent observations). It has been my experience that paragraph one is not difficult for students to write. Sometimes they fill an entire page with the first paragraph, and write much shorter paragraphs for the remaining three sections.

Second Paragraph: Students are asked to write about any thoughts or questions they had during the lesson, or afterwards. They should articulate their thoughts/questions in terms of course content and explain the reasoning behind their thoughts. They may include rhetorical questions. Moon (1999) reveals a number of purposes for using reflective journals, including developing critical thinking and skills in reflection and thinking. Excerpts from paragraphs on students' thoughts follow. Each student provided written consent to have their journal excerpts included in this article. These journals were written in a Managerial Communications course where there was a heavy emphasis on interpersonal skills and nonverbal communication, with lessons on professional dress, networking, business etiquette, conducting meetings, and giving feedback.

> *During the presentation I was thinking back on the materials we reviewed in class on meetings and the guidelines that were given. I was trying to recall if men wearing earrings to a business meeting was acceptable as proper business attire.*
>
> *During the course of the presentation I was thinking about a lot of things. Being that I am a full-figured woman I have to deal with additional factors. Where do I go to look for a suit?…The biggest question was "How much will a suit cost?" Mrs. W. said that suits of high quality are an investment. This would mean that I would have to purchase a good quality suit…Presentation is everything and first impressions are lasting. It would be a good investment to purchase a suit that will help me look my best at an interview.*

…When I was evaluating my other group members I thought about how they would react to my comments, both positive and negative. After receiving our scores and then having to work with the group immediately afterwards, I questioned whether or not the cohesiveness of the team could be affected.

…I was thinking to myself to make sure I used the entire silverware, and the napkin placement the right way…

…I thought this [mock cocktail] party was just an excuse to waste a day…I was wondering why this is part of Managerial Communications?

…I thought how nice it was to get out of the classroom setting but still be learning helpful things for my future…I thought it was a good way to show the class what it would be like to be in a business setting while dining.

These examples illustrate the use of the terms, "thought," "thinking," "recall," "questioned," and "wondering," which are among the criteria listed in Appendix A. Some students will articulate any questions on their minds when writing this paragraph. Due to the subjective nature of journal writing, instructors will use individual discretion in determining how well students have followed the directions for the assignment.

Third Paragraph: This paragraph explores students' feelings and emotions during the lesson, and why they believe those feelings surfaced. It is the most challenging paragraph to write. In many cases students have never before been asked to describe their feelings about what they were learning. Students frequently confuse feelings with thoughts. For example, they might say, "I felt it was a useful exercise…" when in fact they are describing a thought and not an emotion. When I first began using this technique I had little success with this paragraph and opted to have students combine thoughts and feelings into one paragraph. I have since learned to provide instructions with examples of words describing feelings, like "frustrated," "bored," "excited," "angry," "happy," etc., and again I am requesting this as a separate paragraph. Vaill (1996) asserts that ignoring feelings in the learning process is a surefire way to prevent learning from occurring:

The basic point about feeling learning in learning as a way of being is that we need to develop self-acceptance of the feelings that arise during learning because these feelings are a part of the learning. They are not, as institutional learning would have it, annoyances that must be put up with in the learning process. Rather, the feeling of learning is one of the most reliable signals we could want that learning is occurring! (74)

Zull (2004) also recognizes the importance of emotions in learning. When people learn, both practice and emotions contribute to changes in the brain. He describes thought and emotion as "physically entangled;" the way we feel influences our brain. As teachers we want learning to feel good for students, and they need to be aware of their feelings. Journals will indicate whether students' learning experiences are positive or negative.

Some excerpts from student journals follow:

> *…A feeling of guilt came over me while she was speaking. I had assumed that most professors were the same and did not really care for the feelings of students.*
>
> *At the start of the business etiquette luncheon, I was feeling extremely excited. I have never taken part in an activity like this before and was extremely eager to do my best. As the luncheon proceeded, I began to feel more relaxed and comfortable with my environment because I felt I was doing a good job.*
>
> *During the presentation I felt a little bit of anxiety. I have scheduled two interviews for over the Easter break. Being that I do not own a suit, I started to worry. Shortly after, I started to panic. I calmed myself down and realized that I had time and my mother works in clothing retail so she could help me find a suit.*
>
> *… I like dressing up and using my skills that I learned in the classroom in a real life situation…I feel more confident in a business suit…I also feel more important…When I walked into the restaurant there were other business men already eating, and I felt equal to them. I didn't feel like a college student and I don't think they looked at me as one either.*
>
> *…My level of confidence has increased tremendously throughout the semester…The class and especially the luncheon practice has reassured me that I will be successful at things like business etiquette.*
>
> *…I felt at ease with people at my table. The setting made me feel very comfortable compared to the "Mocktail" Party, where I felt nervous at first. I also was anxious to use some of the etiquette tips we went over in class…*

In this paragraph I am looking for the expression of different emotions or feelings. Some students work through their feelings as they write about them; for example, progressing from "nervous" to "more relaxed."

Last Paragraph: The final paragraph in the journal concerns future action(s) the student will take as a result of their learning. Students discuss how they might apply what they learned from the experience, outlining one or more specific action steps they can take in an academic, personal, or professional setting. For example, students would not just say they know the correct way to give performance feedback to their peers, rather they would specify a behavior or two they intend to practice when giving feedback, like owning their statements or describing work-related problems or accomplishments. Returning to Epstein (1994), students progress from the rational to the experiential mode of learning when they link the classroom activity to real-life experiences-what they will do; such learning becomes part of long-term memory. For example,

> *…I plan to apply this to my own meeting that is scheduled for April 22…by making introductions at the beginning of the meeting…also…to set out rules for voting at the beginning of the meeting…and making sure that every member has a clear understanding of these rules.*
>
> *Some specific actions that I will use in the future include: seating the ladies at the table before myself, placing the napkin on my lap, and the proper way to place my silverware when I'm finished eating.*

When I become a manager…If I am able to speak with concern and genuine feelings to my employees…like she did to us, I am confident that I will get positive results…

In this final paragraph students need to outline specific actions or behaviors. They provide some concrete step(s) they will take to transfer their learning into future practice, as indicated in these excerpts.

The rationale behind "process wheel" journals is that learning occurs both cognitively and experientially. Readings, lectures and discussions typically stimulate cognitive learning; exercises, problem solving, simulations, lab experiments, and other activities stimulate experiential learning. The bulk of learning occurs when students process a lesson, if they are willing to express what they know about themselves and what they are learning. Writing journals makes students realize they have in fact learned something they can transfer to another setting.

Added Benefits

Benefits of using journals also accrue to faculty, provided we are open to student feedback. There is the potential to increase our own self-awareness from the feedback students provide in their journals. However, this benefit is by no means a sure thing. Whetten and Cameron (2005) describe the "sensitive line" or point at which we become defensive when we receive information about ourselves that is discrepant with our self-concept. That could very well be the case when students disagree with something we've done, question it, or provide their honest thoughts and feelings. In order to reap the benefits of "process wheel" journals, we as faculty need to first be aware of our self-preservation reflex and then be consciously open to what students express in their journals.

Journals may provide unexpected lessons in the realization that what we thought we taught was not what students learned. Sometimes they miss the point of our lesson; sometimes they gain something other than what was intended. In any case, journals are a good source of honest feedback that faculty may use to re-teach or revisit a lesson, or to provide confirmation that a particular technique should continue to be used. For example, a journal in my team-based course included the following statement of confirmation: From the experiences I had with previous groups I had thought that groups just did not work with class members, but because of group activities like this I now know that groups can be invaluable.

Previous years' journal entries by several students about tight, uncomfortable seating during an activity caused me to locate another room, with more space, the following semester. In the future I plan to let the class decide if teams should sit together or not at the etiquette meal because recent journals reflected both sentiments.

Fukami (2002) created a montage of essays by faculty that outline how their classes were affected by the 9/11 attacks on the World Trade Center in New York City and the Pentagon in Washington, DC. A number of professors described the use of stories, discussing emotions, and processing of thoughts and reactions. As Ruth Axelrod so eloquently stated, "Baring our emotions, our vulnerabilities, in the classroom, were the risks that we accepted; deep learning and emotional connectedness were the rewards" (Fukami, 2002, p. 15).

Evaluation and Effectiveness of Journals

The issue of whether or how to grade journals is left to the discretion of the professor. In a communications course where the mechanics of writing are emphasized, journals would be graded for correct spelling, grammar, punctuation, and usage. Assigning multiple journals in a semester facilitates continuous improvement of written communication skills if professors provide detailed feedback on earlier submissions.

Appendix A includes the instructions my students receive for their journal assignments. In order to solicit honest feedback from students, it is important to assure them both confidentiality and that journals will be graded as objectively as possible, based on the grading criteria provided, and not on the opinions expressed. Appendix B is a simple rubric that may be used by instructors who grade journals.

The only potential risk to students from these assignments is their discomfort in revealing personal thoughts, feelings, and circumstances to the professor. Therefore the assurance of confidentiality is imperative. The potential risk to faculty is reading students' thoughts or feelings about our teaching that we may disagree with or not like. However, being open to receiving such feedback may be useful in our professional development.

In the 6-plus years I have used this technique, there have been no instances of the assignment failing. I have learned that journals work best when students write a series of them throughout the semester-two or three at minimum. It is very important that the instructor provide in-depth feedback on the content of the first journal, so that students may use the feedback to improve their performance on subsequent journals. These journals work best for experiential learning activities or those where classroom lessons have opportunities for direct application.

The excerpts from my students' journals that appear above convince me that these assignments continue to be beneficial to both students and instructor. "Process wheel" journals are liberating in that students share their thoughts/feelings about learning. Journals humanize, as they allow professors to see each student as an individual; and journals facilitate personal growth of students and faculty. Journals connect students to themselves and to their professors who learn about students and about themselves as teachers.

References

Allen, B. & Enz, C.A. (1987). Journal writing: Exercises in creative thought and expression. *The Organizational Behavior Teaching Review,* 11(4), 1-14.

Bandura, A. (1977). *A social learning theory*. Upper Saddle River, NJ: Prentice-Hall.

Coghlan, D. (1993). Learning from emotions through journaling. *Journal of Management Education*, 17(1), 90-94.

Cox, P.L., Bobrowski, P.E. & Spector, M. (2004). Gateway to Business: An innovative approach to integrating writing into the first-year business curriculum. *Journal of Management Education*, 28(1), 62-87.

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist*, 49(8), 709-724.

Fukami, C. (2002). 9/11 Montage: Professors remember. *Academy of Management Learning and Education*, 1, 1, 14-37.

Goleman, D. (1995). *Emotional intelligence*. New York: Bantam.

Kalliath, T. & Coghlan, D. (2001). Developing reflective skills through journal writing in an OD course. *Organization Development Journal*, 19(4), 61-70.

Kolb, D. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall.

McLeod, S. & Maimon, E. (2000). Clearing the air: WAC myths and realities. *College English*, 15(5), 573-583.

Moon, J. (1999). *Learning journals: A handbook for academics, students and professional development*. London: Kogan Page.

National Multicultural Institute (NMCI). Training of Trainers Diversity Training, Washington, DC, June 1996.

Vaill, P.B. (1996). *Learning as a way of being: Strategies for survival in a world of permanent white water*. San Francisco: Jossey-Bass.

Vargo, J.W. (1997). Stretching minds: Personal and academic aspects of teaching. In J.K. Roth (Ed.), *Inspiring teaching: Carnegie professors of the year speak* (pp. 13-23). Boston: Anker Publishing.

Whetten, D. & Cameron, K. (2005). *Developing management skills*. Upper Saddle River, NJ: Pearson-Prentice-Hall.

Zull, J. (2004). The art of changing the brain. *Educational Leadership*, September, 68-72.

Appendix A, Instructions for "Process Wheel" Journals

OBJECTIVE:
Students will process a learning activity by writing a Journal that explores their thoughts and feelings about the activity, and also outlines an application plan for transferring the learning to another setting.

INSTRUCTIONS:
Students will type their Journal, following a Memorandum format*; the subject of the Memo will be the learning activity you are writing about. Each Journal Memo* will include 4 paragraphs following the "Process Wheel" technique. These journals are a written reflection of any learning activity (speaker, video, exercise, field trip, role play, class discussion, or other exercise). The "Process Wheel" addresses 4 components, one per paragraph, and each paragraph should be at least 5 sentences.

- (1st paragraph) What you were doing during the activity-describe the featured class activity in terms of Who was involved, What exactly was happening, Where the activity occurred, Why, or How-provide details to help you recall the activity when you refer to your Journal later in the semester. For example, don't just say there was a video about motivation, but provide specifics.
- (2nd paragraph) What you were thinking during the activity in terms of this course, and any questions you had, and why. Feel free to include rhetorical questions. Use the words "thoughts," "thinking," "impressions," etc., freely in this paragraph.
- (3rd paragraph) What you were feeling during the activity, and why. Be careful not to confuse feelings with thoughts. For example, I felt it was a useful exercise… is a thought, not an emotion. Feelings include: frustration, anger, anxiety, nervousness, happiness, being relaxed, annoyed, bored, satisfied, etc.
- (4th paragraph) How you might apply what you learned from the experience-something specific you can do in the future. Write out a specific action step you can take, either in your personal or professional life. For example, don't just say you now know the correct way to give performance feedback to your peers, but specify a behavior or two you will practice when giving feedback, like owning your statements, and describing work-related problems or accomplishments.

Note: Written assignments completed outside of class will be graded for correct spelling, grammar, punctuation, and usage.*

(*) These instructions are for a managerial communications course where the mechanics of writing are emphasized. In other classes a Memo format is not needed, and instructors may use discretion in determining whether/how to grade Journals.

Appendix B, Grading Rubric for Process Wheel Journals

Each of the four paragraphs-doing, thinking, feeling, application/action step(s) - may be awarded a "minus" to "plus," ranging from 1-5 points.

(+) 5 points Exceeded the requirements for this paragraph; complete, detailed, specific, no spelling/grammar/usage errors.

(+/v) 4 points Met the requirements with no spelling/usage/grammar errors, or exceeded the requirements with one or two such errors.

(vv) 3 points Met expectations but has more than one or two spelling/usage/grammar errors.

(v) 2 points Did not meet the requirements for this paragraph due to omissions, spelling/grammar/usage errors.

(-) 1 point Major omissions, lack of specifics, and too many spelling/grammar/usage errors.

Total Points Possible = 20