

2nd Annual Conference on Higher Education Pedagogy



February 18-19, 2010
The Inn at Virginia Tech and Skelton Conference Center
Virginia Tech, Blacksburg, Virginia
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Letter From the Conference Committee

The annual *Conference on Higher Education Pedagogy* is focused on higher education teaching excellence and the scholarship of teaching and learning. The conference provides a forum for faculty members and graduate students to showcase their instructional research and model their pedagogical practice with the goals of demonstrating the quality of educational research and practice that is being conducted on campuses; providing a mechanism for faculty members to network with other like-minded faculty regarding pedagogy; and expanding faculty members' understanding of and motivation for learner-centered teaching.

This conference would not be possible without the moral and financial support of our Conference Sponsors and General Sponsors, who have provided guidance and encouragement when needed, as well as funding. The conference organizers are also grateful for the support provided by the Vice President and Dean of Undergraduate Education at Virginia Tech, Dr. Daniel A. Wubah, who has supported this pedagogical project from its inception.

In this time of economic challenge, it is essential that we maintain the highest standards for higher education and continue to increase the effectiveness of instruction and the depth of student learning. We are pleased to join with our colleagues to foster educational excellence through the Conference on Higher Education Pedagogy.



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Conference on Higher Education Pedagogy

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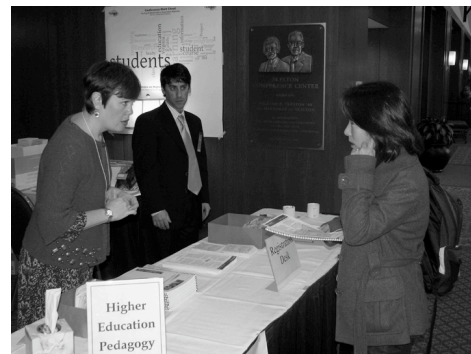
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Opening Keynote Address



Lisa R. Lattuca

Center for the Study of Higher Education
The Pennsylvania State University

Defining Moments: Aligning the Theory and Practice of Interdisciplinary Teaching

Most definitions of interdisciplinarity focus on the integration of disciplinary perspectives but interdisciplinary courses and programs do not always achieve this goal. This keynote explores why by comparing and contrasting definitions of interdisciplinarity commonly found in the literature on undergraduate education with the understandings of college and university faculty who teach interdisciplinary courses. These contrasting examples reveal how different perspectives on interdisciplinarity (and disciplinarity) lead to different curricular and instructional choices. They also suggest key questions that instructors need to address as they develop interdisciplinary courses and programs. Among these: Does interdisciplinarity require the integration of disciplinary viewpoints? Can interdisciplinarity occur in the absence of a foundation of disciplinary knowledge? How should curricula and instruction promote the development of interdisciplinary competence? This lecture will not provide definitive answers, but will rather encourage instructors to think about how they would answer these questions - and about the implications of their answers for undergraduate education.



Dr. Lattuca studies the intersections of curriculum, teaching, student learning, and faculty work in higher education, addressing questions such as how faculty attitudes and behaviors related to curricular planning and instruction influence student learning in higher education, why and how faculty adopt new forms of knowledge production (e.g., interdisciplinary research), and how both disciplinary and interdisciplinary perspectives affect faculty work and student learning in colleges and universities. In her current research projects, Dr. Lattuca is exploring these topics in the context of undergraduate engineering programs. In addition, she is the author of *Creating Interdisciplinarity: Interdisciplinary Research and Teaching among College and University Faculty* (2001), co-editor (with Elizabeth Creamer) of *Advancing Faculty Learning through Interdisciplinary Collaboration* (2005), and co-author (with Joan S. Stark) of *Shaping the College Curriculum: Academic Plans in Context* (2009).

Closing Keynote Address



Mary Taylor Huber

Senior Scholar Emerita and Consulting Scholar
The Carnegie Foundation for the Advancement of Teaching

Teaching Travels: The Social Life of Pedagogical Innovation in Higher Education

A quiet but significant change is taking place in college and university teaching. Once practiced mostly in private, teaching in higher education has become more public. On campuses, in disciplinary and professional associations, among publishers and journal editors, there are growing numbers of face-to-face, print, and on-line forums in which faculty are presenting, critiquing, and building on each other's pedagogical work. While not yet large, this move towards a more studied, systematic approach to undergraduate instruction in higher education has recently gathered steam. This presentation will take up the question of what this all means for the transfer of pedagogical ideas and practices within and across disciplinary, institutional, and national lines. My subtitle borrows deliberately from John Seely Brown and Paul Duguid's important book: *The Social Life of Information* (2002). Their point, briefly put, is that "information" and the "individuals" who produce and use it, "are inevitably and always part of rich social networks" (p. ix) - and that these networks are central to understanding why knowledge sometimes travels and sometimes does not. *Teaching Travels* will start by looking at a couple of cases of classroom innovation--one that can stand for the old status quo, characterized by a culture of "pedagogical solitude" (Shulman 1993) and one that suggests what's possible in the more public pedagogical environments that are developing today. However, while the last twenty years have been marked by many important teaching initiatives that have greatly increased the sheer amount of pedagogical information "out there," its circulation cannot be taken for granted. So, the second part of this talk will look more closely at "demand," in particular at the kinds of communities that inform the pedagogical imagination of teachers. I'll focus on the disciplines first, but also on the emergence of "trading zones" (Galison 1997) between them. I will conclude with thoughts about what it might take to turn these often transitory trading zones into a genuine commons, which scholars treat as an integral part of what it means to be a teacher in higher education.



Mary Taylor Huber is senior scholar emerita and consulting scholar at The Carnegie Foundation for the Advancement of Teaching. She has directed Carnegie's roles in the Integrative Learning Project and the U.S. Professors of the Year Award, and has worked with Carnegie's scholarship of teaching and learning projects, including the Carnegie Academy for the Scholarship of Teaching and Learning. A cultural anthropologist, Huber was involved in research at the Carnegie Foundation from 1985 to 2009, and has written widely on cultures of teaching in higher education. She is co-author of *Scholarship Assessed: Evaluation of the Professoriate* (with Charles Glassick and Gene Maeroff, 1997). Recent books include *Disciplinary Styles in the Scholarship of Teaching and Learning* (co-edited with Sherry Morreale, 2002), *Balancing Acts: The Scholarship of Teaching and Learning in Academic Careers* (2004), *The Advancement of Learning: Building the Teaching Commons* (with Pat Hutchings, 2005), and special reports on "Integrative Learning: Mapping the Terrain" (with Pat Hutchings, 2004) and "The Promise of Faculty Inquiry for Teaching and Learning Basic Skills" from Carnegie's project on Strengthening Pre-Collegiate Education in Community Colleges (2008).

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Research in Teaching & Learning

Presentation Sessions

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Adapting the Studio to Design-Based Disciplines: Research-Based Strategies for Effective Practice

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Abstract: Revolutionary advances in science and technologies will require new ways of thinking. In order to build an agile workforce capable of responding to the rapidly changing needs of the 21st century knowledge-based economy, many researchers have noted that the traditional teaching processes of delivering information, demonstrating the technique, and providing practice in the skills demonstrated should be transformed into one that better prepares students for the complexities of professional practice. Donald Schön originally posed the idea that studio-based design instruction, used successfully for years in architectural education, could serve as a way for all students to learn to participate in the cultural practices of a discipline. Since then, the studio method has been used as a means of teaching a variety of content areas such as mathematics, chemistry, physics, and computer science. However, relatively little attention has been paid to student and teacher participation structures/processes in the studio environment and how these shape the roles students and the teacher have in the collective practice of knowledge creation. In this paper, we propose a framework for understanding the studio method developed through our analysis of over 110 hours of video data, course assignments, instructor journals, and other artifacts collected from 5 studio classes at three universities, and illustrate that framework with an example from an industrial design studio at Virginia Tech.

More than 20 years ago, Donald Schön (1987) promoted the idea that studio-based design instruction, used successfully for years in architectural education, could serve as a way for *all* students to learn to participate in the cultural practices of a discipline. Since then, the studio method has been adapted for use in teaching a variety of content areas. However, little is known about the patterns of interaction through which effective studio teachers establish and maintain an environment in which students begin to understand the complexities of professional practice.

The purpose of this study was to examine the complex ecology of the studio classroom to identify guidelines for applying this method in a variety of design disciplines. This research arises from our desire to leverage knowledge about design education from the fields of architecture and industrial design, which have a long history of design education, to develop new educational models and materials for a field that is just now beginning to apply a design approach to software-intensive systems: Human Computer Interaction (HCI).

The studio method can be illustrated by an example from architecture. In an architecture studio, classes typically meet three times a week for four-hour sessions and students are encouraged to work in the studio rather than at home during off-hours. Students are presented with a design problem that is grounded in the realities of professional practice. At various points in the semester, students present their work to faculty or professional designers for critique sessions intended to stimulate student reflection on and discovery of their developing knowledge through project reviews and student questioning. In this way, students learn the process of design from each other, from faculty, and from professionals in the field.

One key aspect of our work was to identify features of the studio that enabled or constrained the unique social context through which design work is co-produced among instructors and students within the studio. In this way, we focus on those elements that can be implemented easily in other disciplines.

Grounded in socio-cultural theory and using ethnographic methods, we collected and analyzed data from five classrooms encompassing three design disciplines (architecture, product design, and human-computer interaction) across three universities. Our data set for each of these five courses consist of over 110 hours of videotaped recordings of classroom interactions, transcripts of all public electronic announcements and discussions (via listserv, discussion boards, and chats), and any documents distributed to the group by faculty, students, or advisors. Each of the five courses served as one case study (Merriam, 1998; Stake, 1995; Yin, 1994). Each case was analyzed within case for elements essential to the studio approach. In addition, the five cases were analyzed across cases to

triangulate and refine categories of studio patterns that have greater validity. From our analysis, we have developed a set of guidelines for adapting the studio method to other design-based disciplines.

The results of this study shed light on the interplay between the social and physical context of the studio and its influence on learning. Studio assignments are developed to reveal certain principles essential to the discipline. Studio instructors use public critiques of student work to elevate the discussion from the specifics of a particular project to principles applicable in multiple situations to an engaged epistemological understanding of the particular discipline, rather than superficial, lower-order thinking. Through their work on these projects, students develop the necessary disciplinary knowledge. Understanding this knowledge arrives through self-directed learning, especially as students identify gaps in their knowledge and as they fill those gaps through future iterations in the design process. Students seek other resources to build upon their existing knowledge; including peers as a resource is explicitly encouraged.

One key finding from our analysis was that even when students have prior experience with the studio method, as in the architecture and industrial design courses we observed, instructors must actively work to establish certain “habits of studio” which are consistent with accepted attitudes, dispositions, and practices of a discipline.

Consistent with Yackel, Cobb, and Wood (1991), we found that these essential “habits of studio” develop in two ways. On some occasions, the teacher provides explicit direction as to students’ expected behaviors. More frequently norms are co-constructed through student–instructor interactions in which the instructor selects a particular incidence or case through which both domain-specific norms *and* norms of the studio can be negotiated. Students came to understand the ways of thinking and knowing within their discipline through: assignments and associated meta-discussions; explicit prompts; direct modeling and coaching by instructors and professionals in the field; narratives and role-plays; the development of shared metaphors, and explicit instructions,

Based on our analysis we are developing curriculum guidelines and other techniques found to be effective in fostering adaptive design knowledge, which include: suggestions for assignments; ways to develop productive “habits of studio” and the norms of the profession; and effective questioning strategies for the design critique. *For more information about the guidelines, please contact the authors.*

References

- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Stake, R. (1995). *The art of case study research: Perspectives on practice*. Thousand Oaks, CA: Sage.
- Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass.
- Yackel, E., Cobb, P., & Wood, T. (1991). Small-group interactions as a source of learning opportunities in second-grade mathematics. *Journal for Research in Mathematics Education*, 22, 390-408.
- Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage.

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For more information, see: <http://www.studiocollaborative.soe.vt.edu>

Authorship in Student-Faculty Collaborative Research: Perceptions of Current and Best Practices

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Abstract: Determining appropriate authorship recognition in student-faculty collaborative research is a complex task. Responses from 1346 students and faculty in education related disciplines at 36 research-intensive institutions were analyzed to provide a description of current and best practices. The results revealed potential issues and areas of need for future study. Student-faculty collaborative research is common in academic settings. Determining appropriate authorship recognition is required in collaborative projects and can result in stress among collaborators (Louis, Holdsworth, Anderson, & Campbell, 2008). The inherent power differential in student-faculty relationships is an added complication in navigating authorship decisions in this type of collaboration (Geelhoed, Phillips, Fischer, Shpungin, & Gong, 2007).

Introduction

Despite the clear ethical mandate and several recommended methods for determining authorship, conflict and confusion about appropriate authorship continues to be an issue in student-faculty collaborative research (Nguyen & Nguyen, 2006). The goal of this study, then, was to provide a description of student and faculty perceptions of current and best practices for authorship in education related disciplines. The following research questions were posed.

- What are faculty and student perceptions of existing and recommended authorship practices?
- Are there differences in existing and recommended authorship practices?
- Are there differences in faculty and student perceptions of existing authorship practices?
- Are there differences in faculty and student perceptions of best authorship practices?

Methods

The instrument used to collect data in this study was designed by the authors based on a review of the existing authorship literature. Among other items, it included nine scenarios describing collaborative research partnerships used to elicit respondent perceptions about common and suggested authorship practices. The online survey was programmed to present items worded to match to the status of the respondent (faculty or student) to enhance understanding and personalization of the items.

A sample of 1346 faculty and students from 36 Carnegie designated “very-high research” universities participated. Of the 455 faculty, 109 were assistant professors, 117 associate professors, 147 full professors, 32 research faculty, 11 clinical faculty, 11 visiting or adjunct faculty, and 28 other types of faculty members. Of the 891 student respondents, 91 were undergraduate students, 246 were masters or educational specialist students, and 554 were doctoral students.

Results

Space limitations preclude a complete report of our findings, but a few results are included in Table 1 below. Authorship implies intellectual ownership and professional expertise. Inconsistency and ambiguity can lead to inadvertent under- or over- recognition of work contributed and therefore inappropriate comparative evaluations for promotion, tenure, awards, or appointments. Conflict about authorship could lead to a loss of productivity and ultimately loss of contribution to knowledge to the field.

Discussion

To prevent these issues, we recommend that faculty and students closely adhere to the recommendations of the ethical codes (e.g., American Educational Research Association, 2000). Faculty should initiate discussions about intellectual property, authorship, and research contributions early and often.

Table 1 Comparison of best practices and survey results on authorship in collaborative work.

<p>You have an idea for a conceptual article about a new practice in your discipline. You ask a graduate student to find resources on the topic and write a literature review as part of his/her paid graduate assistantship. You revise the written literature review and write the rest of the article. (Faculty Version)</p>	<table border="1"> <caption>Data for Chart 1: Comparison of Current vs Best Practices</caption> <thead> <tr> <th>Authorship Category</th> <th>Current (%)</th> <th>Best (%)</th> </tr> </thead> <tbody> <tr> <td>Professor Sole</td> <td>25</td> <td>10</td> </tr> <tr> <td>Professor 1st Student 2nd</td> <td>48</td> <td>62</td> </tr> <tr> <td>Student 1st Professor 2nd</td> <td>5</td> <td>8</td> </tr> <tr> <td>Student Sole</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Authorship Category	Current (%)	Best (%)	Professor Sole	25	10	Professor 1st Student 2nd	48	62	Student 1st Professor 2nd	5	8	Student Sole	0	0
Authorship Category	Current (%)	Best (%)														
Professor Sole	25	10														
Professor 1st Student 2nd	48	62														
Student 1st Professor 2nd	5	8														
Student Sole	0	0														
<p>A professor designed a qualitative research study. Then, as part of a paid graduate assistantship, you spent 20 hours scheduling and conducting interviews using the professor's interview protocol, 20 hours transcribing the interviews, and 20 hours coding the data. Then, the professor wrote an article for publication in a professional journal. (Student Version, Common Practice)</p>	<table border="1"> <caption>Data for Chart 2: Comparison of Faculty vs Students Practices</caption> <thead> <tr> <th>Authorship Category</th> <th>Faculty (%)</th> <th>Students (%)</th> </tr> </thead> <tbody> <tr> <td>Professor Sole</td> <td>35</td> <td>50</td> </tr> <tr> <td>Professor 1st Student 2nd</td> <td>65</td> <td>48</td> </tr> <tr> <td>Student 1st Professor 2nd</td> <td>2</td> <td>3</td> </tr> <tr> <td>Student Sole</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Authorship Category	Faculty (%)	Students (%)	Professor Sole	35	50	Professor 1st Student 2nd	65	48	Student 1st Professor 2nd	2	3	Student Sole	0	0
Authorship Category	Faculty (%)	Students (%)														
Professor Sole	35	50														
Professor 1st Student 2nd	65	48														
Student 1st Professor 2nd	2	3														
Student Sole	0	0														
<p>You complete a dissertation as part of a doctoral degree program. A professor serves as the chair of the dissertation committee and gives you extensive guidance throughout the dissertation process. You submit an article for publication in a journal based on the results of the dissertation. (Student Version, Best Practice)</p>	<table border="1"> <caption>Data for Chart 3: Comparison of Faculty vs Students Practices</caption> <thead> <tr> <th>Authorship Category</th> <th>Faculty (%)</th> <th>Students (%)</th> </tr> </thead> <tbody> <tr> <td>Professor Sole</td> <td>0</td> <td>0</td> </tr> <tr> <td>Professor 1st Student 2nd</td> <td>0</td> <td>3</td> </tr> <tr> <td>Student 1st Professor 2nd</td> <td>50</td> <td>42</td> </tr> <tr> <td>Student Sole</td> <td>48</td> <td>52</td> </tr> </tbody> </table>	Authorship Category	Faculty (%)	Students (%)	Professor Sole	0	0	Professor 1st Student 2nd	0	3	Student 1st Professor 2nd	50	42	Student Sole	48	52
Authorship Category	Faculty (%)	Students (%)														
Professor Sole	0	0														
Professor 1st Student 2nd	0	3														
Student 1st Professor 2nd	50	42														
Student Sole	48	52														
<p>You designed a research study. Then, as part of a paid graduate assistantship, a student spent 20 hours collecting data as directed by you and 20 hours entering the data into a statistical analysis program. Then, you analyzed the data and wrote an article for publication in a professional journal. (Faculty Version, Best Practice)</p>	<table border="1"> <caption>Data for Chart 4: Comparison of Faculty vs Students Practices</caption> <thead> <tr> <th>Authorship Category</th> <th>Faculty (%)</th> <th>Students (%)</th> </tr> </thead> <tbody> <tr> <td>Professor Sole</td> <td>40</td> <td>38</td> </tr> <tr> <td>Professor 1st Student 2nd</td> <td>58</td> <td>60</td> </tr> <tr> <td>Student 1st Professor 2nd</td> <td>2</td> <td>3</td> </tr> <tr> <td>Student Sole</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Authorship Category	Faculty (%)	Students (%)	Professor Sole	40	38	Professor 1st Student 2nd	58	60	Student 1st Professor 2nd	2	3	Student Sole	0	0
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References

- American Educational Research Association (2000). *Ethical standards of the American Educational Research Association*. Washington, DC: Author.
- Geelhoed, R.J., Phillips, J.C., Fischer, A.R., Shpungin, E., & Gong, Y. (2007). Authorship decision making: An empirical investigation. *Ethics & Behavior, 17*(2), 95-115.
- Louis, K.S., Holdsworth, J.M., Anderson, M.S., & Campbell, E.G. (2008). Everyday ethics in research: Translating authorship guidelines into practice in the bench sciences. *The Journal of Higher Education, 79*(1), 88-112.
- Nguyen, T. & Nguyen, T.D. (2006). Authorship ethics: Issues and suggested guidelines for the helping professionals. *Counseling and Values, 50*, 208-216.

Can online biology courses meet the standards of a lecture course?

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Abstract: There has always been a great demand for introductory biology courses. Not only do we have difficulty meeting this demand, but student requests are compounded by scheduling conflicts that may affect progress toward their degree. With assistance from IDDL, we developed a two-semester online introductory biology course that met the same standards expected of a traditional class. A textbook was recommended, but other textbooks could also be used. For motivated and discerning students online resources could work as well.

In the development of this online course we emphasized Bloom's taxonomy. For each biological concept, students sequentially engaged in these learning components (% of course grade): 1) list of biological terms to emphasize while reading the text plus PDFs of key graphics and summaries of key points; 2) a mind map (15%) that helped students understand how biological terms are interconnected; 3) a multiple choice (MC) quiz (10%) that tested basic knowledge; and 4) a critical-thinking short essay question (15%) that required integration and application. Four online MC exams (60%) were taken with a proctor at on- and off-campus facilities. Students could progress as rapidly as possible, but they had to meet deadlines to ensure that they completed the course on time. Instructors were available to assist students during regular office hours, online office hours, by email or telephone.

This research was based on online courses that were taught in summer and fall 2009. During second summer session and fall semester, we taught both the online and a regular lecture courses covering the same material and both classes took the same examinations. The lecture class students also completed the mind maps but these students did not take online quizzes. In summer school the online class and lecture classes had between 20 and 30 students. In the fall semester, the online class began with 30 students and the lecture class began with 132 students.

There were no differences in average grades for each of the exams (Figure 1), mind maps and final course grades (Figure 2) between online and in-class students. However, the lowest grade for the online students was higher than the lowest grade for the in-class students. This finding might be an artifact of a small sample size. In conclusion, we interpret these data to indicate that an online class can meet the same standards as a regular lecture class.

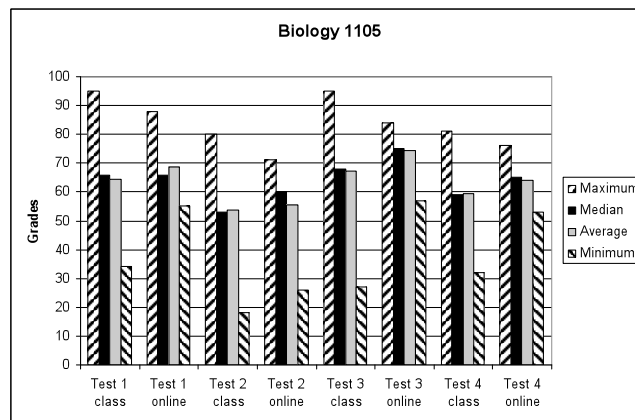


Figure 1. Comparison of grades for students taking Biol 1105. Both the online and lecture classes took the same examinations. ($N = 18$ online students; $N = 123$ in class students.)

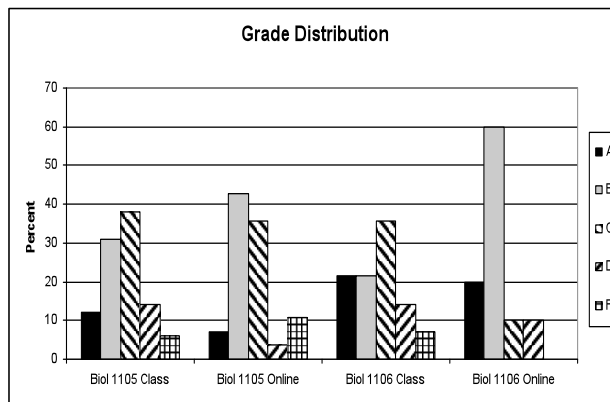


Figure 2. Comparison of final course grades for students taking both semester of introductory biology. Both classes took the same examinations. (Biol 1105: $N = 18$ online students; $N = 123$ in class students Biol 1106: $N = 10$ online students and $N = 28$ in class students.)

One major problem with the online course was the high attrition rate. Approximately 35-50% of the online students dropped the class after beginning it. In interviews, some students admitted that they did not know how to manage their time. Several others admitted that during a regular lecture class, it was easier to cram just before examinations. Other students placed great value on in-class student-professor interactions, something that was difficult to have in an online class.

We had one case of an alleged honor court violation. This student complained about accessibility to the course materials but the computer records showed that the student did access the course materials but never did the work or when they claimed to have difficulty when other students were online doing the work. In our opinion, if students remain in the class, they can expect a course grade comparable to their peers who are taking the lecture course and they could easily enter a regular lecture course.

Does Practice Make Perfect? Effects of Computerized Formative Assessment on Student Learning

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Abstract: One strategy in student learning is allowing students to self-assess in which assignments are checked for correctness but not graded. These allow the instructor as well as the student, a chance to recognize where students are going wrong and address any lack of understanding before the students are tested. One means for doing this is to provide explanations for why the right answer is the right answer. Students in sections of Principles of Macroeconomics used an online homework program called Aplia. This program initially included two types of problem sets – a practice, ungraded assignment in which students received immediate feedback, and a graded assignment with a set due date. Completion of the practice problem set was completely voluntary; students were free to skip it. Data from assignments in these courses are used to test hypotheses about the effect of the availability of the practice problem sets on student performance on the graded assignment.

Introduction

A common theme in efforts to improve student learning, is to give students a chance to test their abilities without penalty before being graded. In formative assessments, students are given assignments that are checked for correctness but grades are not attached. Formative feedback is a response to some action by a learner intended to communicate information that will modify thinking and behavior and improve learning. The students receive feedback which identifies problems they may have achieving the learning objectives. This feedback can be verification of whether a response is correct, the correct answer, a topic contingent description or an answer contingent description.

Shute (2008) provides a comprehensive review of research literature on the benefits and effectiveness of formative feedback that reveals, "... many conflicting findings and no consistent pattern of results" (p. 153). The feedback can signal a gap between the current and a desired level of performance, possibly motivating a higher level of effort. Formative feedback also can provide information that may be useful for correcting inappropriate strategies, procedural errors or misconceptions. It can also help a learner realize that ability and skill can be developed through practice, that effort is critical to increasing skill and that mistakes are part of the learning process. Shute's review finds that keeping the feedback quick, frequent, impersonal, and irrespective of the individual appear to be positive factors in feedback effectiveness.

Methods

Student study guides have long accompanied introductory texts in Economics and other disciplines. Study guides are static and usually only provide the correct answer. Online assessments can be edited by the instructor, include links to web resources, and provide instructors with a record of attempts. Aplia is a web based course management package that offers the instructor the opportunity to give students both practice and graded problem sets. Participation in and completion of these practice problem sets (PPS) is voluntary. Students do not have to attempt them before beginning graded problem sets (GPS). The researcher has been using Aplia since the Spring 2007 semester for Principles of Macroeconomics. An analysis of the effectiveness of the practice problem sets was conducted using data from two sections offered during the Fall 2009 semester with a total of 102 students. Twelve weekly pairs of problem sets were posted online, each of which had 20 questions and was accompanied by a practice problem set of between 10 and 20 questions. For practice problem sets students could get immediate topic based feedback, while for the graded problem sets this would become available immediately following the deadline for completion. Since the practice problem sets provide the correct answers, only the student's participation was recorded. All practice problem sets and graded problem sets remained available for review even after new ones were posted.

Results

For any random student, did working on a PPS influence the score on the corresponding GPS? Across all assignments, the average score when a student participated in a PPS was 15.7/20 versus 11.5/20 for students who did not. This suggests that participating in the PPS had a positive impact on the student's score on the GPS. To test this

hypothesis the data for PPS and GPS were pooled into one panel for analysis. Additional data available about each student that could be used as control variables included the student's GPA at the end of the semester, the student's class and whether or not the student was a business major. GPA is usually thought of as representing a student's ability in the assessment literature and is expected to positively correlate with the score on the GPS. The student's class, freshman, sophomore, junior or senior can be interpreted as an indication of the student's maturity and level of study skills attained. Business majors, COBE, could be expected to have a higher level of interest in Economics and therefore perform better than non-business majors.

The adjusted R square value for the model is .3053. Both the intercept and PPS were highly significant. GPA is significant as might be expected students with higher GPAs perform better on a graded problem set whether or not they completed the practice problem set. The score on the each GPS assignment was almost always highly significant, reflecting the difficulty of the individual assignment. Running a fixed effects model without these time invariant variables did increase the R square to 0.44 and increased the values of the PPS coefficient and the intercept since the other variables student variables were dropped.

Did students who completed more practice problem sets earn more points on the graded problem sets? The total score for GPS then was regressed on the number of practice problem sets completed. The R squared value with this model is .46. The intercept and GPA are highly significant. The PPS participation rate is weakly significant, i.e. only at the 10% level of confidence.

Did students who completed more practice problem sets perform better on the broad and later measures of achievement, the exams and in the course? Participation in the first 6 PPS however was not a significant factor in performance on the midterm, nor did participation in all 12 have any significant effect on the final exam grade when GPA was included as a control.

If individual participation rate in the practice problem sets improves individual performance on the graded problem set would not this also be the case of the entire class for each graded problem set? Casual observation in the past gave credence to this belief; the class average seemed to rise and fall with the participation rate. A regression of the GPS means on PPS participation rate for each assignment yielded an R square value of 0.81 and shows that the mean rate of participation in the PPS is highly significant. This result is significant in that assessment of learning objectives is usually done on a class basis, not an individual basis. If the availability of practice problem sets is improving the performance of the group as well as the performance for individuals who use it, then this formative assessment method will appear very effective.

Conclusions

Students who participated in the opportunity to do a practice problem set and receive formative feedback did better on the corresponding graded problem set. The class average measure of performance for each graded problem set likewise increased the greater the number of students doing the practice problem set. Overall participation in PPS did not improve performance on assessments further away in time, that is, the midterm and the final exam. Only weakly did it have any effect on the overall performance on all graded problem sets. As the literature in this field has found, the immediate effect can be large but the retention and thus the effect on performance on medium term assessments tends to be weaker. How we assess achievement of learning objectives may well make a difference in our conclusions about the effectiveness of learning strategies. Immediate feedback appears to have immediate results, so measures related to immediate assessments will more likely show a positive effect than longer term assessments. In this vein, online immediate formative feedback that provides explanations in addition to correct answers appears to be effective in helping students perform better in the short-run. Whether their less significant effect in the medium terms found here is a matter of retention or just measurement methods invites further research.

References

Shute, V.J. (2008). Focus on formative feedback. *Review of Educational Research*. 78(1), 153-189.

Effective Cohorts: Collaboration and Motivation

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Abstract: Student cohorts exist when students are admitted together as a group, take classes and remain together through graduation. The Master of Science Teacher Education program at Virginia Tech has been structured as a cohort to promote the development of sustainable professional identities through opportunities to engage in the application of theory in a safe environment, collaborate with colleagues, develop relationships with mentors, and engage in reflection before and after practice of their professional skills. Multiple qualitative methods were used to gather data from members of the cohort and their cooperating teachers to determine the effectiveness of the cohort structure. The results of the study conclude that The Master of Science Teacher Education cohort supports previous literature on cohorts. The researchers suggested continued research on the lasting effects of the cohort relationship.

The Effect of Multi-modal Reflection on Practice in e-Portfolios

Kelly Parkes,

Sara Kajder,

School of Education, Virginia Tech

Abstract: This research focuses on the role of technology in facilitating reflective practice, specifically the role of multi-modal reflective practice within e-portfolios for preservice teachers. Reflective practice has been established as a critical tool for developing teacher identity in and on their teaching practice. The notion of specific teacher education reflective practice has also been examined recently through a technological lens. While recent scholarship continues to advocate for providing preservice teachers with opportunities to exercise reflective practice, the authors attempted to investigate a framework of reflective practices in order to construct assessments for reflective practice. Using frameworks within an electronic portfolio to elicit, support and capture students' growth as deliberative reflective practitioners, the findings of this study indicate that levels of reflective practice are different, depending on the type of modality utilized. The purpose of the study was to examine how music education and English education preservice teachers use reflective practice, both in written form (blog) and video format (vlog) and to devise a rubric that could be used across the two disciplines to assess students' levels of reflective practice based on the findings of the study. The two modes of reflective practice (blog and vlog data) utilized by preservice teachers were examined qualitatively using NVivo software for content, emergent themes, similarities, and differences between the two modalities of reflection from each student over one semester during student teaching. In the current study, the vlog and blog materials of each student ($n = 6$) were examined, with the nature of the mode disclosed at the time of analysis. Using the assessment of reflective practice frameworks, the researchers coded the data. The student data revealed that students' narratives are markedly different between the two contrasting modalities in the levels of reflective practice. The blog data revealed both pre-reflection and surface level reflections and a deeper level, the level of pedagogical practice, was identified predominantly in the vlog data only. Discipline specific content and themes such as classroom management, score reading and conducting, and literature selection, remained consistent across both modalities. As a result, the assessment of the levels of reflection frameworks have been incorporated into a rubric that is now used to assess the depth of reflective practice in the Arts and Humanities pre-service teachers of this large Northern American state school. It appropriately evaluates how students are reflecting about their experiences and is a useful tool for outside accreditation reporting. A benefit of this tool is that it evaluates both types of modalities, blog and vlog, from students. It is recommended that more students be given the opportunity to reflect in vlog formats during their field experiences. In summary, the findings of this small study support the use of technology, specifically vlog reflective practice in e-portfolio, which in this case elicited deeper reflective practice with preservice student teachers.

Effects Of Mentoring At-Risk, First-Semester, Freshmen Life Science Majors

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Virginia Tech

Abstract: Certain types of highly intelligent and capable high school students have been identified as at-risk of under-performing in higher education, particularly in the STEM fields. These include: first generation college students, historically disadvantaged minorities (e.g. Blacks and Hispanics), and students from poor rural and urban high schools. The literature suggests that faculty mentoring during their first semester can improve grades and increase retention. However, most of this research is based on ex post facto measures of association. This paper reports on a mentoring pilot using an experimental design with random assignment to control and treatment groups. The target population was at-risk undergraduates in the 2007 freshmen class of life science majors in the Colleges of Science, and Agriculture and Life Sciences at Virginia Tech. This includes all blacks and Hispanics and first generation non-Hispanic whites. Asians, who are mostly continuous education and suburban students, were included as a reference group.

Introduction

As is typical of field experiments, the original research design was altered during implementation. First, disadvantaged minorities received less mentoring, and Asian students more than was planned. Because of the small number of black and Hispanic students, they were assigned first to a finite number of mentoring opportunities (31) and NonHispanicWhites and Asians filled the rest of the mentoring slots. The remaining students (153) served as the control group. About equal numbers of students in the treatment group were assigned to casual and active mentoring (active mentors were supposed to meet with the students on a regular basis throughout the semester). Actual mentoring did not conform to the design, however. In the end, only nine students were actively mentored. Twenty-two other students received more causal mentoring (meeting at least once during the semester). The assignment of only whites and Asians to the remaining slots resulted in them making up the largest proportions of the control group. Nonetheless, Asians ended up being a disproportionate number of those actively mentored. Only one black or Hispanic student received active mentoring, which may be an indicator of the greater difficulty of establishing a close working relationship between disadvantaged minority youth and non-Hispanic white faculty. Because of this mal-distribution we are unable to directly determine the effect of the most intensive mentoring for disadvantaged minorities.

In addition, not all students conformed to standard expectations for a life science (LS) major and took all three required pre-requisite courses. Approximately four out of five of the 177 freshmen who registered in a LS major in the Fall, 2007 took all three of those courses. Two types of students did not. The first group (14 students) placed out of one or more courses because they had equivalent AP biology or chemistry high school courses or they earned Advanced Standing in math. The remaining (16) students did not place out. The latter had significantly lower math and verbal SAT scores. The largest proportion were first generation whites, most from rural communities. The second largest proportion were disadvantaged minorities. Only 1 Asian student failed to take a required course.

Results

Table 2 provides average grades (QCA) in the prerequisite courses for blacks and Hispanics controlling for whether or not they are from a suburban community. An examination of grades in the control group by itself can indicate whether suburban students have an advantage. Biology and math grades do not vary by district. However, in chemistry, blacks and Hispanics from suburbs earn over a full letter grade higher (1.2) than non-suburban blacks and Hispanics. Mentoring contributes to statistically significant higher grades in all three subjects. It improves performance by a half of a grade (.5) in biology and a full letter grade in math (1.0 for urban-rural students and .9 for suburban). The gain for chemistry depends on type of home community: it is little more than a half letter (.6) grade for suburbs and over a letter grade (1.12) for urban-rural youth. Thus, mentoring helps mitigate the poorer preparation in chemistry of disadvantaged minorities from less affluent communities. Most striking, freshmen who are doubly at-risk fail two of their three pre-requisites. They average an F (.78) in chemistry and a D (1.5) in math. If mentored, they earn a C (1.9) in chemistry and a C+/B- in math.

Table 1. F-tests on average grade of disadvantaged minorities in pre-requisite courses by community type

		Biology	Chemistry	Math	N
Urban-Rural	Control	2.2 (.716)	.78 (.972)	1.5 (.923)	9
	Treatment	2.7 (.688)	1.9 (1.01)	2.5 (.819)	11
Suburban	Control	2.3 (1.154)	1.9 (.918)	1.7 (.972)	7
	Treatment	2.8 (.766)	2.5 (1.12)	2.6 (1.312)	11
F-Test		p<.06	p<.02	p<.01	

The last table displays attrition rates over two years by treatment. Nearly one in four at-risk students (23%) accepted into Life Science in the summer of 2007 were no longer LS majors by fall, 2009. However, mentoring substantively diminished the loss. Only 18% of students who were casually mentored dropped out of the major, compared to one in four in the control group. None of the students who received active mentoring were lost. Leaving the major is not necessarily a loss for the university - many of these students switched to a cognate STEM field. Students who received no mentoring were three times more likely (16%) to drop out of STEM than students receiving casual mentoring (5%), and all of the actively mentored students stayed with their original major.

Table 2. Attrition rates for all minorities and first generation whites in the mentoring study

Attrition rate Fall 07 - Fall 09	Faculty Mentoring				Linear x Linear X2
	None	Casual	Active	Total	
Life Science	25.1% (42)	18.2% (4)	0%	23.2% (46)	p < .08
STEM	15.6% (26)	4.5% (1)	0%	13.6% (27)	p < .07
Base N	167	22	9	198	

Conclusion

A rigorous assessment of a pilot mentoring program indicates mentoring interventions during their first semester helps at-risk freshmen in the life sciences to pass the pre-requisite courses and establish a foundation to succeed in their major. On average, at-risk students who are not mentored fail two out of three pre-requisites that foreshadow ultimate failure in the major.

Experiences of International Students Related to their Decision Making Process to Pursue a Graduate Degree in the United States

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Rosemaliza Mohd Kamalludeen, *Career and Technical Education*

Kelly Munly, *Human Development*

Marshaun Glover, *Psychology*

Michael Martin, *Virginia Cooperative Extension*

C. Kay Lucas, *Psychology*

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Virginia Tech

Abstract: Higher education in the United States has become internationalized and has benefited from its international students' input of income and academic contribution. Although international students have increased in the past 25 years, the enrollment in the graduate school has begun to fluctuate since 2001 (CGS International Graduate Admissions Survey, 2009). Choosing to pursue a graduate degree in the United State is perhaps one of the most challenging personal journeys that an international student will make, however, there are few articles specifying their experiences in decision-making to study in the United States. In order to understand the process, a qualitative study was conducted by adapting the conceptual framework of push-pull model which suggests that students undergo a series of perhaps conflicting motivations for studying overseas (Mazzarol & Soutat, 2002). We found the push reasons of international students to pursue graduate studies outside of their own countries are that funding is not available at home, future careers need a degree from other countries, information is lacking at home, and the encouragement of studying abroad from friends and family members. Reasons of pulling international students to study in the United States are funding availability, quality of education, quality of life, job opportunities and good relationships with professors in the United States. Moreover, results of this study also revealed the correspondence to the Oberg's (1979) U-curve theory that international students experience four stages of cross-cultural adaption. The implication of this study can be helpful for institution of higher education on recruitment and retention of international students.

International graduate student enrollment in American universities has declined with a slow reversal since 2001 (Council of Graduate Schools, 2009). Choosing to pursue a graduate degree in the United States is perhaps one of the most challenging personal journeys that an international student will make; however, researchers have not explored international graduate students' experiences in their decision-making process to pursue a graduate degree in the United States. In order to understand this process, the authors of this study conducted interviews with six international graduate student participants enrolled at a university in the southeastern region of the United States. Participants were selected to meet the following criteria: 1) possession of a nonimmigrant visa (i.e., an F1 or J1 student visa) issued by the Immigration and Naturalization Service, and 2) current enrollment in any graduate program at the specified university. Participants were purposefully recruited as a convenience sample through word of mouth. This purposeful non-probability sample enabled researchers to obtain information-rich cases to enhance the information scope (Castaneda, 2008; Shen & Herr, 2004). Of the six participants, three participants were of Asian ethnicity, from the countries Malaysia, Indonesia, and China. Two participants were of Hispanic ethnicity, from the countries Brazil and Columbia. One participant was from Iceland. All participants were between 29 to 32 years of age, earned less than USD 24,999 in their home countries prior to attending graduate school in the United States, and were currently married. Three participants were male and three were female. All participants received funding support to pursue their graduate degrees; five participants received graduate assistantships from the university attended, and one participant received a full scholarship from his home country. Three participants had been in the United States for less than fifteen months, and the rest for more than three years.

In-person interviews were conducted in English in October and November 2009. Open-ended interview questions were developed based on prior findings in the literature and were tailored with the research purpose of this study. Each interview started with an introductory question: "What were some of the reasons you decided to pursue a post-graduate degree?" Researchers next explored participants' decision-making processes to pursue post-graduate degrees in the United States by asking, "What factors did you consider when choosing a university?" and "What made you decide to choose a university in the United State as opposed to a university in your own country or in

another country?" Then, subsequent questions focused on participants' concerns before coming to the United States, their experiences during their application process, and their experiences once beginning their studies in the United States. Each individual researcher acknowledged the reflexivity of their role as an interviewer through documentation in the form of an audit trail, personal notes, and explanation of their interpretation of data. Two of the researcher interviewers were also international students, providing rich perspective on international student experience from an insider point of view.

The key findings from this study show that there were six key recurring themes that impacted these international students as they decided to attend graduate school in the United States. Those areas were relationships, funding, knowledge-seeking behavior, quality of US education, challenges, and enhanced life experiences. These findings closely align with the "push-pull" conceptual framework which advances the thought that there are home country "push" factors that motivate students to study overseas and there are also host country "pull" factors that motivate students to study overseas (Mazzarol and Soutar, 2002). This study also supports the theoretical framework of the U-curve hypothesis that was interpreted by Oberg (1979) to have four stages including: 1) a "honeymoon" stage, 2) a period of distress and hostility, 3) a period of active coping and improved relationships, and 4) a period of relatively complete adjustment (Grushina, 2009). The conclusions reached from this study support the aforementioned theory. In relation to the first stage, interviewees exhibited excitement and great interest in coming to the United States for graduate study. The quality of education, opportunities for professional growth and advancement, positive recommendations from family and colleagues, and funding opportunities were enticing to the students as they were first arriving in the United States. In regard to the second stage of the theory, before arrival and somewhat after arrival, there were concerns about the ability to master the English language in both verbal and written form and also cultural adjustment. Homesickness was also common among the students interviewed. The third stage showed that students began to adjust to their environment by various means. Some expressed gratefulness for the international student services in the role that it played to orient them to the community, the university and also to other international students. Others actually became married while they were students and that helped them to cope with living in another country. Finally, the fourth stage applied greatly to the interviewees as all of them exhibited great satisfaction and happiness with their circumstances now that they are in the United States. They are very satisfied with the courses, relationships developed, and their integration into the host culture.

The finding of this study may be extremely helpful to Universities that seek to increase applications by international students for graduate study. Communication barriers were common issues in the application and enrollment process and also in the process to receive funding. The processes experienced were described as "tedious", "slow", and "time consuming". Providing as much information to students as possible to prepare them for the process will be helpful in recruiting the best students to the universities. Corresponding to the thoughts of Lee and Rice (2007), further researchers could examine the attitudes of host country faculty, staff and students towards international students on college campuses, and their awareness of the issues that internationals face in the acclimation process in a foreign country.

References

- Castaneda, R. H. (2008). The graduate experience: Living and studying abroad (a case study). *Revista Electrónica de Investigación Educativa*, 10, 1-16.
- Council of Graduate Schools. (2009, April). Findings from the 2009 CGS International Graduate Admissions Survey. Retrieved from http://www.cgsnet.org/portals/0/pdf/R_IntlApps09_1.pdf
- Lee, J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination and neo-racism. *Higher Education*, 53, 381-409.
- Mazzarol, T., & Soutar, G. N. (2002). 'Push-pull' factors influencing international student destination choice. *International Journal of Education Management*, 16, 82-91.
- Oberg, K. (1979). Culture shock and the problem of adjustment in new cultural environments. In E. Smith & L. Luce (Eds.), *Toward internationalism: Readings in cross-cultural communication* (pp. 43-45). Rowley, MA: Newbury.
- Shen, Y.J. & Herr, E. L. (2004). Career placement concerns of international graduate students: A qualitative study. *Journal of Career Development*, 31, 15-29.

Exploring Faculty Experiences in the Development and Use of Electronic Portfolios for Student Assessment

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Abstract: Electronic portfolios are becoming a popular medium in which to showcase student work and demonstrate student competencies. This study sought to use a phenomenological, qualitative approach to examine the faculty experience in developing and assessing electronic portfolios and the methods that faculty use to foster student self-regulation. Seven faculty members at Virginia Tech who are currently using electronic portfolios were interviewed. Themes developed from the interviews suggest that faculty experiences with electronic portfolios evolve through time and familiarity. In addition, faculty and students experience the additional benefits of increased self-regulation when students are encouraged to take a larger role in their learning and to reflect in detail about their learning process.

Introduction

Electronic portfolios (ePortfolios) have rapidly developed to support a variety of pedagogical processes and assessment purposes. Despite the popularity of ePortfolios at the university-level, relatively little research has examined the experiences of the faculty who utilize them for assessment. One common attribute of ePortfolios is student self-reflection on the work they have incorporated, yet rarely do studies explore the methods that faculty use to develop self-reflection and other aspects of self-regulation in students through the ePortfolio assessment process. The purpose of this phenomenological study is to investigate and understand the experience of Virginia Tech (VT) faculty members using ePortfolios as an assessment tool and also to understand the methods by which faculty members use ePortfolios to foster students' growth as self-regulated learners. Portfolios have been frequently used over the past two decades within undergraduate and graduate programs to assess student learning. Moving the portfolio into a digital environment in the form of an ePortfolio provides students with the ability to increase the amount of text, video, still images, and audio recordings that they can archive while also increasing the pedagogical and assessment tools available to the instructor (Abrami & Barret, 2005). Most portfolios include a reflective layer as students reflect on why they have chosen particular pieces of work as examples of their learning (Lavin & Camp, 2002; Wang & Turner, 2006). By asking students for their reflections, instructors are, implicitly or explicitly, encouraging students to develop their abilities as self-regulated learners (Bandura, 1986). Several studies have found that students prefer completing an ePortfolio (Pecheone, Pigg, Chung, & Souviney, 2005) and that students experience a growth in their ability to reflect on their learning and the learning process through the creation of an ePortfolio; however, very little has been written about the experience of the instructor in the development and use of ePortfolios to foster self-regulation. Studler and Wetzel (2008) examined the cost and benefits of ePortfolios in teacher education and found that faculty satisfaction with ePortfolios appeared strongly associated with the faculty members' valuing of student-centered education. Tisani (2008) found that ePortfolios provided a set of challenges for faculty, including resistance to the type of assessment, non-completion on the part of the student, and difficulties with evaluating and assessing portfolios.

Methodology

The participants were recruited after consulting with the VT ePortfolio Initiatives Office (VTEPIO) to identify which faculty/staff are using ePortfolios for summative evaluation of students. Six faculty members and one graduate assistant from multiple disciplines were interviewed. Data was obtained through standard interviews consisting of eight open-ended questions

After each interview, the assigned interviewer transcribed the interview. The transcriptions were then studied for emerging codes. After the transcripts were coded individually, the group members met to find common codes and patterns across the seven interviews.

Results

Two themes emerged from the data analysis – the experiences of faculty with using ePortfolios and the methods faculty use to foster self-regulation. Categories related to the first theme are (a) use and future use of ePortfolios, (b) implementation issues and (c) concerns, challenges and problems. Categories related to the second theme include (a) self reflection, (b) student ownership, and (c) guidance.

Conclusion

The extent that faculty use ePortfolios evolves with time and familiarity; within the range of these experiences, we have been able to find a basic pattern describing the development of ePortfolios as a form of assessment. The initial impetus for developing an ePortfolio leads to a set of challenges and concerns. Technology “buy in” by professors appears to be dependent on whether the perceived utilitarian value of the software as a convenient educational tool overcomes the technical frustrations and perceived encumbrances associated with an unfamiliar technology. Initial challenges lead faculty members to develop forms of guidance for users to expedite the learning process and reduce the frustration with learning and using a new technology. The process of development often leads faculty members to expand the uses they had planned for ePortfolio, increasing the level of self-reflection for example. Our results were similar to Wang and Turner (2006) who found that preservice teachers who had completed ePortfolios were more comfortable with the thought of using new technology. ePortfolios have been in use at the university for less than three years. The flow described above may become a cyclical pattern as ePortfolios are use for a longer period of time.

Two benefits of the ePortfolio process are the development of students as reflective practitioners and increase in student sense of ownership. Nearly all of our participants included some level of student self-reflection in their ePortfolio. For some departments, self-reflection was an optional element of the EP; however, similar to other studies (Pecheone, Pigg, Chung, & Souviney, 2005; Levin & Camp, 2002), a majority of our participants found that simply incorporating self-reflection does not result in detailed reflections. Participants in our study who focused on developing in-depth self-reflections found that feedback on the self-reflections aided students in transitioning from superficial reflection to a detailed examination of their work and practice.

References

- Abrami, P.C., & Barret, H. (2005). Directions for research and development on electronic portfolios1. *Canadian Journal of Learning and Technology*, 31(3), 1-13.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Levin, B., & Camp, J. (2002). Reflection as the foundation for e-portfolios. *Society for Information Technology and Teacher Education International Conference, 2002*, 572-576.
- Pelliccione, L., & Raison, G. (2009). Promoting the scholarship of teaching through reflective e-portfolios in teacher education. *Journal of Education for Teaching* (35), 271–281.
- Strudler, N., & Wetzel, K. (2008). Costs and benefits of electronic portfolios in teacher education: Faculty perspectives. *Journal of Computing in Teacher Education*, 24, 135-141.
- Tisani, N. (2008). Challenges in producing a portfolio for assessment: In search of underpinning educational theories. *Teaching in Higher Education*, 13, 549-557.
- Wang, S., & Turner, S. (2007). Learning experiences in developing electronic portfolios. *International Journal of Information and Communication Technology Education*, 2(3), 75-86.

Game Aided Pedagogy to Improve Students' Learning Outcomes and Engagement

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Abstract: Web games provide a platform for creative instructional activities that can capture the students' attention towards the course. These games can be used to emulate the realistic situations that can be used as effective lab experiments that could give the students a hands-on experience using real world scenarios. This paper presents an innovative web-based game developed for the demonstration of the driver-behavior at signalized intersections that can be used as a supplementary tool for the Transportation Engineering course. The paper also provides a methodological framework for collecting data about student engagement in a course and in particular presents the data collection procedure used in Transportation Engineering Course (CEE 4604). The collected data was analyzed to find the student engagement in the course after the introduction of the game. The paper explains the conclusions drawn from the research with insights into possible drawbacks and scope for future improvements.

Impact of Cohort Learning on Student Growth

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Abstract: This qualitative research study explored how student membership in an educational cohort at the graduate level facilitates student growth and the development of working relationships. The researchers utilized a phenomenological design to examine five students' experiences in a master's level counselor education cohort through in-depth interviews. Emergent themes were patterns of communication, cohort as a valuable resource, and cohort as a support system. Findings suggest that educational experiences were enriched through cohort membership. However, results also highlighted potential detriments to cohort membership. Further research is suggested to better articulate how cohorts can best be utilized to enhance educational experiences.

Information Literacy and Fluency Skills: The Importance of Your College Librarian

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Abstract: Like many disciplines, Political Science has studied the purposes and goals of its undergraduate major. Beyond learning a list of facts, much attention has been given to developing our students' research skills. These techniques may be taught in substantive courses, or in courses specifically teaching research methods. While research methods courses often teach valuable quantitative and/or qualitative analysis skills, college accreditation agencies are emphasizing the importance of teaching general information literacy skills. These skills include locating, filtering and using research ethically. Simply teaching these information literacy techniques to students may be insufficient in our current educational climate; both parents and administrators often demand evaluations of our students' learning. This paper presents a model assessment of an information literacy curriculum in research courses. The assessment incorporates a pretest/posttest design, measuring gains in student skills. The findings reinforce (1) the value of librarian-led information literacy skill instruction, and (2) teaching these skills in the context of a research paper assignment.

Background

Beyond learning a list of facts, in recent years, much attention has been given to developing our students' research skills. Simply teaching skills to students may be insufficient in our current educational climate; both parents and administrators often demand evaluations of our students' learning. These skills include locating, filtering and using research ethically.

In this study, students in two courses were assessed. A majority of those enrolled in the Political Science Research Methods were Sophomores or Freshman, while nearly every student in the International Studies Senior Seminars was in their final year of college.

In each class we studied, the students completed assignments related to information literacy during the term. For example, gathering information and writing a policy report on an NGO, obtaining background information on a class reading, and writing a term paper on a current political issue. To facilitate these research projects, in several classes students received librarian-led instruction. These session included information on locating research sources using library tools, as well as on the free Web, and critically evaluating popular and scholarly information.

Methods

We developed an instrument to assess information literacy skills, using the ACRL national standards. To assess learning, it is essential to (1) examine the same individuals at multiple points in time, and (2) to control for relevant inputs. This study utilizes a pretest/posttest design and evaluates the effect of librarian-led instruction on general information literacy skills. The pretest was administered during the first two weeks of instruction. At the end of the term, we returned to each class, and students completed the posttest.

To assess the degree to which students internalized their new information literacy skills, they were asked to identify which components of a commercial Web page would be most relevant to evaluating its objectivity. Although neither the course instructor nor the librarian specifically taught the students Web page critiquing skills, these techniques are a logical extension of the information critiquing skills the librarian taught them.

Findings

Those who were taught information literacy skills by an instructional librarian increased their ability to evaluate the objectivity of Web sites. Regardless of course or year in school, the below table demonstrates measurable gains from librarian-led instruction. For example, in the bottom row of the table we see that students taught by librarians increase the accuracy of their Web page evaluation by between nine and ten percentage points.

Conclusion: The data demonstrate that student research skills strongly benefit from librarian-led information literacy instruction. Since instructional librarians are the information literacy specialists at our colleges and universities, it is only logical that direct instruction from these experts benefits our students both in the classroom and on the Web.

Table 1. One Semester Change in Webpage Critical Evaluation Skills, depending on Librarian Instruction

	<i>Research Methods</i>		<i>Senior Seminar</i>	
	<i>With Librarian</i>	<i>Without Librarian</i>	<i>With Librarian</i>	<i>Without Librarian</i>
Decreased Score	42.9% (12)	40.6% (13)	13.3% (2)	25.0% (5)
No Change	10.7% (3)	21.9% (7)	26.7% (4)	25.0% (5)
Increased Score	46.4% (13)	37.5% (12)	60.0% (9)	50.0% (10)

Note: The numbers in each cell represent the percent in a given course who over the term decreased, didn't change, or increased their facility in critically evaluating commercial Web pages. The numbers in parentheses are cell frequencies.

The Moments We Miss: Using Facial Recognition Software As An Educational Research Tool

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Abstract: The constant use of technology has changed the way students engage in their educational classes. With constant access to the Internet, students are no longer learning the same way they did ten years ago. How long is too long to lecture, review notes, or engage in a hands-on activity? These questions were raised and are being explored by Agriculture Education. A Teaching and Learning Laboratory was constructed in 2008 to examine students as a learning group, study how they learn, assess their engagement levels, their attention spans, and determine how educators can tailor curriculum in agricultural education to meet the needs of today's learners. The graduate students in the teaching and learning program are using the lab to examine the factors associated with organization and enthusiasm of an instructor and how to be able to determine these factors affect students perceive the instructor and the content of a lesson. We expect to be able to use the data collection and analysis software to help enhance and maintain rigor of our academic offerings and research capabilities.

The students that fill America's classrooms and lecture halls are vastly different than the students from just ten years ago. Today's students require constant stimulation, have answers at their fingertips, and aren't hanging on every word their professor says, unless it interests them or the answer isn't in their textbook or Power Point. Born after 1982, Prensky (2001) coins our millennial learners as being born into the "light" or digital natives. Other experts refer to them as millennial learners (Spencer, 2008). With the constant glow of the screen of a cell phone, a computer monitor, or an mp3 player, today's learners have a different set of needs that previous generations have not yet begun to understand.

The Department of Agricultural and Extension Education at Virginia Tech is currently working towards answering those questions. In 2008, a Teaching and Learning Laboratory was constructed (Figure 1) to examine students as a learning group. The Teaching and Learning Lab is broken into two parts; a learning classroom and a control room. The classroom is equipped with five cameras, microphones, three InfaRed (IR) ports, a SmartBoard system, DVD Recording system, Lavalier microphone, and Polycomm system. The control room is the second portion of the lab, which is equipped with seven DVR systems, each holding 250 GB of space, a control panel to operate each camera, and a computer to upload data, edit video, and conduct data analysis. Using Noldus FaceReader and Noldus Observer as tools (Figure 2), emotional response to different kinds of teaching techniques is being measured by more than a traditional assessment (Figure 3).

The use of facial recognition software will help researchers determine what emotional responses students give to instructors and what techniques instructors can use to improve their teaching, rapport, relationships, or engagement with their own students. The Teaching and Learning Laboratory will help determine if organization, presentation style, rapport, credibility/control, content, and student interaction affect engagement in students and their classroom environment.

The purpose of this pilot study was to investigate the phenomenon of students' perceptions of organization in a lesson. Following Rosenshine and Fursts' Factors That Influence Learning, an instructor presented a lesson that was organized and disorganized to groups of students, looking at their opinions, feedback, and facial expressions from video's that were collected.

After data was collected, the posttest and video were compared. With a small sample size of 24 students, most of the students did not show any signs emotionally that the lesson was organized or disorganized and displayed a neutral facial expression. All performed well on the posttest and there was no connection between college major, academic standing, and posttest score. Students who were presented with the disorganized lesson noted this on the posttest of their opinion of the instructor, but the ratings were not exceptionally low.

The pilot study was seen as a success since the research team was able to examine the factors that influence learning. Questions raised as a result of this pilot study will help us in future studies using the Teaching and Learning Lab. We find the interviews to help gauge how students react to what the instructors are teaching valuable since they are not emotionally responding visibly in the video recordings. We found that if a teacher was organized or disorganized was very subjective to each learner and that each one would view the level of organization differently. This was also true for engagement and whether or not a student was engaged in the material that the instructor was teaching at the time.



Figure 1. A view of the cameras in the teaching classroom.



Figure 2. The researcher uses FaceReader to analyze emotional response. FaceReader analyzes the 32 major points on a human face, of any ethnicity, and looks for underlying traits.



Figure 3. Screen shot of FaceReader running diagnostics on a human face. FaceReader will monitor and record the seven major faces a human makes, as well as diagnostics such as gender, ethnicity, approximate age, and if the person has facial hair or glasses.

Narrating Their Way Through Literacy, Agency, and Identity

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Abstract: This work addresses how one student's literacy narrative reflects the goals of a Critical Literacy class. Critical Literacy is currently a pilot class, a result of recent course revisions that eliminated deficit type "basic writing" and "basic reading" classes. I examined student literacy narratives to determine if pedagogical choices in the newly structured class encouraged critical engagement with social, cultural, and political influences, especially on their identities as "literate" college students. I relied on scholarship related to first year composition, "basic writing," and writing literacy narratives. My argument is that Parker, the student whose work is analyzed, assumes agency over her identity through writing her literacy narrative. Her ability to conceptualize what happened in a fourth-grade English class coupled with her retrospective retelling and judgment of the event reflect her growing ability to evaluate relationships between institutional ideologies and student self-actualization. As I recognized Parker's compositional moves towards individual reform, I highlighted my own commitment to critical pedagogy which means constant vigilance over my pedagogical choices as they facilitate room for dialogue concerning literacy, agency, and identity.

Many scholars and institutions expect first-year composition to transition students into academic discourse (Bartholomae, 1985). In response, basic writing courses seek to imitate the discourse of "literate" individuals. Many teachers use literacy narratives as a pedagogical tool to create opportunities for students to reflect on entering (or exiting) "academic" discourse communities (Corkery, 2005; Soliday, 1994). Scholars have argued that self-translation through the writing of literacy narratives allows writers to situate themselves in social and cultural contexts thereby having more agency negotiating contact zones between language communities (Corkery, 2005; Soliday, 1994, Pratt, 1990). Literacy narratives treat each student's life as dialogical, enabling them to contextualize and "recognize complex identity negotiations and discursive positions" (Hesford as cited in Corkey, 2005, p. 52). Timothy Barnett (2006) enacted such an approach from a critical pedagogy perspective using personal narratives as a way into personal and social critique of asymmetrical relations of power to "create opportunities for individual and social reform (p. 373)." Barnett's philosophy and approach echo my recent efforts using literacy narratives in a pilot section of a Critical Literacy class. My analysis explores one student's negotiations with her literate identity.

In the first week of class, Parker posted her initial goals for the class on her ePortfolio as: "Being able to write an essay and read it aloud to my peers, Finishing an essay without changing anything grammar, etc., [and] Getting an A in all my English classes while attending college." Parker's goals for Critical Literacy revealed her beginning anxieties about reading aloud in class and making grammatical errors in her writing. Anxieties such as these are common among most of the students I teach who share stories of being embarrassed by their teachers, defeated by standardized placement tests, and tracked in "dummy" classes throughout school. Further, Parker's valuing of grammar-free essays and A's echoes a modernist value system basing literacy achievement on quantifiable test scores and a mastery of Edited American English. A month later, Parker critically situated her literacy as "a battle that [she] must overcome" introducing her in a place of conflict with respect to school literacy. Parker appears powerless in her sentence constructions using passive voice to characterize literacy as affecting her, rather than her affecting literacy. Most of her sentences, even in cases where "I" is the subject rather than "literacy" or "education" described her as a victim of literacy when "labeled an I.E.P student in the fourth grade" who was "placed in classes with students who didn't know the differences between red and blue."

She briefly represented herself as having power and agency when writing about a distressing school experience that she associated with literacy. The following passage from her literacy narrative is the only series of sentences where Parker used "I" as the subject of a sentence followed by an active verb. Parker's narrative illustrated agency in her sense of hope and a feeling of responsibility towards her classmates as she wanted to make them proud by doing well on a fourth grade writing test. Even as she represented herself as a potential agent of change, as the subject of the sentence and catalyst for success, she gauged her success on outside affirmation: the test, her teacher, or her classmates. Following this brief moment of agency over her literacy, Parker contrasted hope with an announcement that "A couple weeks later I was told I failed the writing test in front of everyone." *She wrote. She prayed. She*

failed. And they laughed. And what is the result? School literacy gained power; Parker did not. She wrote, “that day destroyed me.” Parker, as “me,” was the direct object of destruction. From this point in the literacy narrative, Parker became a victim of literacy, regressing back into “I” as an object within sentences, even through passive constructions.

Although this may seem like a poor representation of Parker’s opportunity for individual or social reform, I’m struck by her agency in framing “this horror story.” Parker wrote the words “I remember” before relaying her paralyzing fourth grade experience. Parker named what happened as she remembered. She dealt with the emotions of being “less of a student compared with everyone else” or “dumber than the other students.” Although her narrative represents how she feels “stuck in this situation because of literacy,” she chose this topic for her paper. She chose to write about these difficult moments. And in that decision, she reclaimed agency over her literacy through the authoring of her narrative. Parker’s “personal writing [provides] an important entry into an analysis of social forces” (Barnett, 2006, p. 356). Further evidence that Parker engaged in social critique can be found in her concluding paragraph, challenging reductive ideas about literacy. She recognized that literacy can “differ from person to person” as “determined by our past experience.” She further implicated schools for a reductive view of literacy asking “What if schools taught us to look at [literacy] in a social way? Ways that we know best communication.” Through her literacy narrative, Parker dialogued with an ideology that had previously paralyzed her, causing her to “freeze up” in any class writing. She recognized that literacy is dialogic; she writes “communication.”

I’m compelled by paralysis caused by Parker’s fourth grade writing test. Her narrative, like so many others I’ve read, reflecting passivity, defeat, and discrimination. As a critical pedagogue, I must evaluate how my choices impact students. In *Critical Pedagogy: Where are We Now?* Joe L. Kincheloe (2007) writes that “adherence to...critical notions, many believe, requires those of us within the tradition to criticize and move to new plateaus while recognizing our own failures and the failures of those in the domain” (p. 9). Social reform may seem futile when faced with situations like Parker’s description of fourth grade power structures where traditional literacy programs continue to be “inadequate and ineffective in dealing with the plethora of today’s societal dilemmas and tensions” (Leistyna, 2007, p. 97). Parker’s literacy narrative allowed her a spectator’s view of crippling influences from her past. Reflecting on her fourth grade experience, she suggested that school “taught me ways to write, but never how to understand the meaning of writing.”

References

- Barnett, T. (2006). Politicizing the personal: Frederick Douglass, Richard Wright, and some thoughts on the limits of critical literacy. *College English*, 68(4), 356-381.
- Bartholomae, D. (1986). Inventing the university. *Journal of Basic Writing*, 5(1), 4-23.
- Corkey, C. (2005). Literacy narratives and confidence building in the writing classroom. *Journal of Basic Writing*, 24(1), 48-67.
- Kincheloe, J. L. (2007). Critical pedagogy in the twenty-first century: Evolution for survival. In McLaren, P. & Kincheloe, J. L. (Eds.), *Critical Pedagogy: Where Are We Now?* (pp. 9-42), New York: Peter Lang Publishing.
- Leistyna, P. (2007). Neoliberal non-sense. *Critical Pedagogy: Where Are We Now?* McLaren, P. & Kincheloe, J. L. (Eds.), (pp. 97-126), New York: Peter Lang Publishing.
- Soliday, M. (1994). Translating self and difference through literacy narratives. *College English*, 56(5), 511-526.
- Pratt, M.L. (1990). Arts of the contact zone. In Greene, S. & Lidinsky, A. (Eds.), *Academic Inquiry to Academic Writing* (pp. 354-369). Boston: Bedford/St Martin’s.

Student Retention: Impacts of an Agricultural Economics First Year Seminar Course

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Abstract: As universities seek to enhance student retention, a positive first year experience is critical for student success. The objective of this research is to determine whether an agricultural economics first-year seminar course improves retention rates of its undergraduate students. This course provides a unique opportunity for students to learn about the agricultural economics discipline, and also gain insights into what it takes to be a successful college student. Analysis of data from the university's Office of Institutional Research examines whether departmental retention rates improve after course implementation in 1998, and compares retention rates to the college and university. An alumni survey determines the success of the course in meeting stated course objectives. Qualitative analysis using student evaluations and senior exit interviews also assess the impact of this course on student success. Results indicate that student retention (from freshman to sophomore year) improved following implementation of the first-year seminar course, as did four-year and five-year graduation rates. Comparisons to college and university averages show that the post-implementation departmental retention and graduation rates exceed those of the College of Agriculture and Life Sciences and exceed four-year graduation rates for the university overall. Alumni survey results indicate that students found the seminar course to be helpful in adjusting to college life, learning more about the Ag Econ discipline, meeting Ag Econ faculty, and connecting with their fellow Ag Econ majors. Course evaluations indicate that the class was helpful in making the transition to Virginia Tech and in learning about the department, its faculty, and fellow students. During senior exit interviews, many students mention the seminar course, commonly referred to as the "circle class" or "campfire class", as one that made them feel comfortable in the department and the university, and one where they formed friendships that continued throughout their entire undergraduate career. The one-credit departmental first-year seminar course improves student success and enhances the sense of connectedness with the department and the university.

Background and Justification

Research indicates that students are more likely to succeed academically and to have a positive educational experience if they feel a sense of connectedness with their university academically and socially (Tinto, 1993). In 1998, the Department of Agricultural and Applied Economics (AAEC) created a First Year Seminar course with three primary goals:

- to assist students in the transition to a four-year institution while creating a sense of community among AAEC students;
- to introduce students to the breadth and depth of the discipline and various career opportunities in the field; and
- to provide a forum for meeting Departmental faculty and learning of their teaching/research/outreach interests.

The Department created this course to fill a need: no similar course existed at the college or university level. Since 1998, all entering AAEC freshmen and external transfer students enroll in this course during their first fall semester on campus. At the start of students' academic careers, when many courses may have hundreds of students per section, this AAEC First Year Seminar provides an opportunity to become engaged with professors and student colleagues in a small class setting. This student-centered classroom environment empowers students to take control of their own learning and to take responsibility for the decisions they make regarding time management, study skills, future course selection, and ultimately their successful graduation. Students learn about the broad array of available careers within their discipline, meet AAEC faculty with whom they will take classes or potentially conduct undergraduate research, and begin to create a sense of community with their student colleagues.

Results and Discussion

First Year Seminar (FYS) course evaluations indicate the value of the course both as a community-building opportunity and an information-gathering course. The evaluations highlight the following specific benefits: meeting

fellow students; meeting Departmental faculty and learning about their teaching/research/extension activities; and learning about the breadth and depth of the agricultural economics discipline. Students also mention the benefits for transitioning to college life. Students often indicate during senior exit interviews, conducted annually by the Department Head and selected faculty, that the FYS course provided an opportunity to make lifelong friends. The course thus helps achieve social integration into college, a retention success strategy described by Tinto (1993).

Analysis of Institutional Research (IR) data shows improvement in retention and graduation rates following implementation of the course (Table 1). Student retention (from freshman year to sophomore year) improved following implementation of the FYS course, from an average of 77.6% between 1989 and 1997, prior to implementation, to an average of 82.9% between 1998 and 2007, following implementation. Four-year graduation rates also improved post-implementation (from 44.9% to 61.8%), as did five-year graduation rates (from 58.2% to 70.1%).

Table 1: Department Retention and Graduation Rates (%), Pre- and Post-seminar Course

	Continued to 2 nd Year	Graduated in 4 years	Graduated in 5 years
Pre-seminar ¹	77.6	44.9	58.2
Post-seminar ²	82.9	61.8	70.1

¹1989 to 1997; ²1998 to 2007. **Source:** Institutional Research (IR), Virginia Tech (VT)

Table 2 compares AAEC retention and graduation rates to the college and university rates, post-implementation of the FYS course. Departmental rates exceed those of the college (see AAEC versus CALS: 83.2% versus 77.4% for retention rates; 62.1% versus 49.0% for four-year graduation rates; and 69.4% versus 58.0% for five-year graduation rates). The departmental four-year graduation rate exceeds that of the university overall (see AAEC versus VT: 62.1% versus 52.0%). Additional analysis shows that students who start in AAEC and transfer to other departments have higher retention and graduation rates than the college and university on average. (Details are available from the authors.) Thus, the FYS course appears to help students find the “right” home at VT and helps to create a connection to the university overall, even for those students who transfer out of AAEC to other VT majors.

Table 2: College, University and Department Retention and Graduation Rates (%), Post-seminar course¹

	Continued to 2 nd Year	Graduated in 4 years	Graduated in 5 years
AAEC	83.2	62.1	69.4
CALS ²	77.4	49.0	58.0
VT	88.9	52.0	75.0

¹1999-2007, 1998 College data not available; ²College of Agriculture and Life Sciences. **Source:** IR, VT

Additional insights were gathered from an email survey of AAEC alumni in the fall of 2009. Using a Likert scale ranging from “not at all helpful” (a score of 1) to “very helpful” (a score of 5), alumni responded to questions about the helpfulness of the First Year Seminar course in meeting certain objectives. Eighty-three percent of respondents indicated that the course was somewhat to very helpful in assisting with the adjustment to college life at Virginia Tech. Ninety-one percent gave similarly positive responses (somewhat to very helpful) for helpfulness in learning more about the AAEC discipline, 87% for learning about the teaching/extension/research programs of VT AAEC faculty, 100% in helping meet VT AAEC faculty, and 100% in connecting with fellow AAEC majors.

Conclusions

Student retention is an important issue for higher education. Both qualitative and quantitative analyses indicate the success of the AAEC Department’s First Year Seminar course in improving student retention and graduation rates. Evidence further indicates student satisfaction and appreciation of the FYS course as a tool in transitioning to university life and creating a sense of community with faculty and fellow students. A first-year experience course is just one way for departments to create a sense of connectedness and to show students that they are concerned about student success. This research provides valuable information on success strategies that departments can implement to enhance retention and graduation rates.

References

Institutional Research. Retrieved from <http://www.ir.vt.edu/>

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Successful Strategies for Learning Chinese Vocabulary

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Abstract: This research focuses on strategies that native English speakers use to learn to speak and write Chinese vocabulary words in the first year of an elementary Chinese class. The purpose of this research is three-fold: (1) to identify successful strategies used by native English speakers to learn Chinese vocabulary, (2) to understand how successful students utilize available resources to learn Chinese, and (3) to evaluate how learning resources and pedagogical techniques enhance learning. The findings will facilitate better development and instruction of Chinese language courses at the university level. The research will add to our knowledge of how Chinese is learned as a foreign/second language. The study is being conducted at Radford University in the U.S. Twenty native English speaking, novice learners of Chinese, who have no previous experience with Chinese, began participating in this study fall semester 2008. Data is being collected from demographic student surveys, questionnaires, reflection papers, interviews, observation and field notes, and the Strategies Inventory for Language Learning (SILL), designed by R. Oxford. This research is being analyzed both qualitatively and quantitatively in the students' first year of Chinese study.

Introduction

In comparison to European languages, Chinese has been ranked as a Level Four language by the United States Defense Language Institute and considered one of most difficult languages to learn. And yet, many Westerners want to learn Chinese for economic and political reasons. Many of them are curious and fascinated by the Chinese culture and language. Nevertheless, it is not surprising to hear students' comments like "it is much more difficult than other courses." "It's very time consuming, and yet it's a beautiful language that I'm very happy to study." For the most part, students take pride in learning Chinese, and some of them hope to continue studying it until they become fluent.

This research focused on strategies used by native English speakers to speak and write Chinese vocabulary words in the first year of an elementary Chinese class. The purpose of this research was three-fold: (1) to identify successful strategies used by native English speakers to learn Chinese vocabulary, (2) to understand how successful students utilize available resources to learn Chinese, and (3) to evaluate how learning resources and pedagogical techniques enhance learning. The study was conducted at Radford University. Twenty native English speaking, novice learners, with no previous experience with Chinese, began the study in the Fall Semester of 2008. All students had experience in learning other languages up to three years in high school. Those languages were typically romance languages such as Latin, French, German or Spanish.

Methodology

I used both quantitative and qualitative approaches to conduct this research. The qualitative research focuses on discovery, insight and understandings from the perspectives of learners. Wanting to know more about the field and improving practice leads to researchable questions, and some of which are best approached through a qualitative research design (Merriam, 1998, p.1). The qualitative research methods also give researchers like me an in-depth understanding of the individual which is not portrayed in experimental methodologies. Through Strategies Inventory for Language Learning (SILL) designed by R. Oxford, one demographic student surveys, four questionnaires, three reflection papers, three interviews, many field notes and observations, I have captured and documented students' perceptions and their strategies on how to acquire Chinese vocabulary successfully during the school year 2008-2009. The research ended in April, 2009.

Findings

One of the most challenging aspects of learning Chinese is the tonality of the language. Tones, in terms of writing Pinyin, listening, and speaking, were all major problems for the learners. It was not surprising that the most popular strategy for memorizing new characters was "character repetition." Of the twenty, students who responded to my questions regarding how they practiced new vocabulary words, 74% said character repetition was one of the most

successful strategies they used regularly. There is no doubt that this was a successful way to memorize new characters.

Many students reported that they used flash cards to help them organize new vocabulary and to review for tests. However, one student said, "I generally write characters out by hand, then I type in the Pinyin. I try not to use flash cards too much because I tend to get distracted very easily while using them, and I only get practice in recognizing the characters, not writing them." In summary, visual learners preferred flash cards. Study habits were a great influence on success or failure. Students said their study habits were motivated by frequency of testing. Students, who studied consistently for a minimum of thirty minutes per day, and at least one hour a week, were the most successful learners. Learning resources such as computer software were available to students in the language lab. However, only software required by the instructor was used effectively.

Understanding learning styles could give better insight into why some students are more successful Chinese learners. Because some Chinese characters are derived from pictographs, visual learners tended to make picture associations with characters more easily than students with other learning styles. The strong audio learner might not have as much difficulty distinguishing between tones and different words that sound similar. The kinesthetic learner might find the process of writing a character appealing and interesting by writing it out. From Oxford's Strategies Inventory for Language Learning (SILL), we found that 39% of students applied combinations of Auditory, Visual, and Kinesthetic strategies. Twenty eight percent of the students were classified as Visual learners; 17% were Visual and Kinesthetic learners; and 16% were Visual and Auditory.

The findings of this study may be used to develop better Chinese language courses at the University level. This ongoing research has identified successful strategies used by novice Chinese learners. Instructors of Chinese must be aware of students' learning strengths and tailor the curriculum to match their learning skills. Furthermore, instructors should challenge their students to embrace different learning strategies to learn Chinese successfully.

Conclusions

- (1) Second language learning strategies are very important because the use of strategies is related to language achievement and proficiency;
- (2) Motivation and learning strategies are interrelated. Motivation also affects what strategies students use and how they achieve language proficiency;
- (3) Learning Chinese tones is the most difficult skill to achieve, and it requires time and practice in listening and speaking activities for proficiency in communication;
- (4) The most beneficial learning activities were interrelated to the types of learners student reported. For example, audio learners learn by listening; visual learners learn by seeing.

In order to deal with language teaching, from an educational perspective, we also have to address language learning. To deal with learning, we must deal with human cognition and human memory. Learning Chinese does not require that students remember word inflections that change the form of a word to indicate differences of tense, number, gender, case, and so forth, like many other foreign languages. Learning Chinese does, however, require a unique memorizing effort: remembering thousands of new words, along with their tones and characters. Unlike students learning an alphabetically based language, students learning Chinese have to remember whole words aurally as well as graphically. How do we as teachers reduce students' memorizing load? Larger data collection and more research on successful strategies used by native English speakers learning Chinese vocabulary are needed in the future.

Teaching Controversial Issues through Guided Group Discussion: An Approach To Cognitive Dissonance And Conceptual Change

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Abstract: The effect of participating in a guided group discussion and observing a guided group discussion on attitude toward controversial issues was investigated. Twenty-two undergraduate students completed a pretest to measure attitudes toward two controversial topics: sustainable agriculture and animal welfare. After the pretest, students were randomly assigned to one of four small groups. Each group was assigned one of the two topics and given neutral questions, related to the characteristics of controversy, to research in preparation for a group discussion. Two groups, each with a different topic, met at a time for the purpose of having neutral discussions on the topic. While one group discussed, the other group observed. A posttest was administered to measure the change in attitudes toward the controversial topics. The results indicated that five students experienced conceptual change during the study; however, there was no significant difference between the effects of participating in or observing a group discussion on attitude toward controversial issues.

Introduction

Many controversial issues, social and political, are debated in the world, and much of these topics become infused into various curriculums throughout colleges and universities. It is questionable whether instructors can maintain neutrality when teaching such topics. The rhetorical nature of controversial issues suggests that teacher neutrality may be impractical and “the idea of maintaining a neutral position is portrayed as an illusion” (Cotton, 2006b, p. 77). This viewpoint, then, begs the question, why teach controversial issues, and, if taught, what is the best method for instruction?

The purpose of this study was to look into using the teaching strategy of guided group discussion as a method for providing instruction on controversial issues. When a teacher presents information on topics that are controversial in nature, there may be students who disagree with material delivered, thus resulting in cognitive dissonance. With continued instruction, it is possible that conceptual change could occur. However, if the teacher is unable to instruct in a neutral manner, he or she may unintentionally cause conceptual change from a bias standpoint. The study was steered by the overarching question of whether or not teaching controversial issues through guided group discussion was an effective approach to cognitive dissonance and conceptual change.

Framework for this study was built on Festinger’s (1957) cognitive dissonance theory and the cognitive reconstruction of knowledge model presented by Dole and Sinatra (1998). According to Festinger (1957), people desire consistency among individual concepts including attitudes, behaviors, beliefs, values, and opinions. Cognitive dissonance theory states that dissonance occurs when information is presented that contradicts with one’s held concepts. Two things impact the strength of dissonance: the amount of discordant beliefs and the degree of importance attached to each belief. When contradiction is present, something must adjust in order to eliminate the dissonance. When beliefs are changed to rid inconsistency, this modification is termed conceptual change.

Methods

The participants in this study were undergraduate students (N=22) enrolled in a public speaking class. The class was evenly divided into two laboratory sections with eleven students meeting in each section. Two instruments were used in a pretest to assess the attitudes of participants toward two specific controversial issues – sustainable agriculture and animal welfare.

In each laboratory section, students were randomly separated into two groups (N=6 and N=5) for the purpose of participating in a group discussion. Each group was then randomly assigned a controversial topic for the group discussion – sustainable agriculture or animal welfare. Students in each group received a set of neutral, topic specific research questions that focused on the characteristics of the controversy and were instructed to answer these questions, individually, in preparation for a group discussion. Two weeks after receiving the research questions,

students participated in a twenty-minute group discussion guided by the questions researched. Prior to the discussion, students were instructed to maintain a neutral position and present evidence gathered during individual research, addressing both sides of the controversy. As the discussion took place, participating students took notes on various points that were made. At the conclusion of the discussion, each student formulated a position on the topic and articulated this position in a closing statement. While one group in each laboratory section participated in the discussion, the other group observed. One week after the group discussion, the same instruments were used in a posttest. Results of the attitude pretests and posttests were analyzed and compared to determine shifts in attitude (conceptual change). For the purposes of this study, conceptual change was defined by the researcher as an increase or decrease of one pretest standard deviation in attitude scores on the posttest.

Results

Of the eleven students who participated in the group discussion about sustainable agriculture, two students experienced conceptual change in this group. From the eleven students who observed the group discussion about sustainable agriculture, three students experienced conceptual change. Of the eleven students who participated in and observed the group discussion about animal welfare, none of the participants of this group experienced conceptual change.

Discussion

Participating in a guided group discussion about controversial issues has many implications in support of this method as an approach to cognitive dissonance and conceptual change. First, this strategy encourages students to consider both sides of a controversial issue which is something that might not be done otherwise. The action of researching both sides of an issue encourages student learning at the top three levels of Bloom's Taxonomy, where examining data, organizing ideas, and preparing for a discussion represent analysis and synthesis. The top level of Bloom's Taxonomy, evaluation, is reached when students compare the different points of discussion, evaluate the information, and then present a closing statement where an argument toward the controversy is presented and supported by garnered knowledge (Anderson, Krathwohl, & Bloom, 2001). Secondly, guided group discussion allows the teacher to maintain neutrality and avoid bias when providing instruction on controversial issues. This frees the teacher from struggling to not employ a personal agenda and creates an autonomous learning environment for the students. It is this autonomy that gives way to a third advantage of this instructional strategy. In cases where conceptual change did occur, it was the students who were responsible for their individual conceptual change, not the instructor. This suggests that guided group discussion as an instructional approach to controversial issues relieves the teacher from responsibility of conceptual change that may occur amongst students.

References

- Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.
- Cotton, D. (2006b). Teaching controversial environmental issues: Neutrality and balance in the reality of the classroom. *Educational Research*, 48(2), 223-241.
- Dole, J., & Sinatra, G. (1998). Reconceptualizing change in the cognitive construction of knowledge. *Educational Psychologist*, 33(2/3), 109.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Using Role Playing as a Teaching Strategy: An Interdisciplinary Approach to Learning

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Abstract: This work addresses the importance of interdisciplinary role playing exercises as an effective pedagogical teaching strategy in higher education. Advantages, limitations and recommendations for possible classroom implementation are discussed.

Literature Review

Professors who create a multidisciplinary experience are better able to provide a meaningful educational climate (Bain, 2004). Recognizing that one size does not fit all in regards to student learning (for instance, some students are visual learners, while others learn more effectively through practical exercises), various teaching strategies are encouraged. Boyer (1990) argues that we need not examine each form of “scholarship” independently, but rather strive for the mix that will, in the end, best serve the learning population. Parini (2005) strongly believes that good teaching requires cultivating wildness; attempting to keep students on edge. The use of interdisciplinary role playing is an effective pedagogical method to accomplish that goal.

Role playing serves as an excellent means to engage students. Engagement emphasizes interactive, inquiry-based scholarship rather than passive learning (Sperber, 2005). After all, the value of student engagement is to enhance student learning and critical thinking skills.

In recent years there has been a decided upswing in the momentum of integrating teaching methods across the disciplines (Gagnon, 1998). While performance has been traditionally limited to theater departments, in her book, *Crossing Boundaries: Knowledge, Disciplinarity and Interdisciplinarity*, Julie Thompson Klein (1996) notes the importance of integrating performance across disciplines. Winner (2005) encourages students to experience and analyze the role of performance beyond theater.

Methodology

One of the controversial topics covered in a course entitled *Police and Society* concerns the issue of conflict management (i.e., domestic violence) and police response. Following classroom discussion on the classical theories and previous research conducted on domestic violence, students are asked to integrate their theoretical knowledge into a practical role-playing exercise.

The selection of the participating students is voluntary. Criminal justice student-volunteers (acting as police officers) are asked to place their name and their partners name on a sheet of paper. The instructor selects from the list which students will be the primary student-officers. Secondary participants (those not initially selected to participate due to limited numbers) serve as back-up officers or serve in a supervisory capacity, if called upon by the primary or back-up units.

With the assistance of skilled and trained actors from the School of Dance and Theatre at Radford University, as well as student volunteers from the student governed Improv Club at Radford University, criminal justice students are exposed to a variety of domestic conflict situations often encountered by police officers. Theater students are also educated in the conflict-management theory by attending classes and rehearsal. This is to assure that both the theatre students and the criminal justice students understand the importance of their respective roles.

At the conclusion of each “domestic improv” scene, which focuses deep into the conflicts of human relationship, discussion/debriefing follows so the students, those who participated and those classmates who watched/critiqued the performance, can better understand the significance of learning theory and its practical application (the location varies by semester depending upon space and availability).

Results

This role playing exercise has been performed each semester for the past 25 years (not necessarily all at one institution of higher learning). It is important to note that this particular class is often offered a number of times per semester, thereby increasing the frequency of role-playing performances and analyses.

Results, through after-performance oral debriefings and formal written end-of-the-semester course evaluations, indicate that the interdisciplinary role playing exercises provide students great insight into the practical application of conflict management theory.

Criminal justice students gain a greater appreciation of the dangers that responding police officers encounter during disturbance calls. Participating theatre students are provided the opportunity to expand their performance skills, while developing a better understanding of societal issues. For example, theatre students often note that they had no idea of the dangers police officers experience while handling “routine” calls.

Conclusion

Results found the use of role playing exercises to be an effective means to engage students while integrating both theory and practice. Faculty should strive to incorporate role playing activities into their pedagogy, where appropriate.

References

- Bain, K. (2004). *What the best college teachers do*. Cambridge: Harvard University Press.
- Boyer, E. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Lawrenceville: Princeton University Press.
- Gagnon, P. (1998, September). Acting integrative: Interdisciplinary and theater pedagogy. *Theatre Topics*, 2(8), 189-204.
- Klein, J. (1996). *Crossing boundaries: Knowledge, disciplinarity, and interdisciplinarity (knowledge, disciplinarity and beyond)*. Charlottesville: University of Virginia Press.
- McKeachie, W. J. (1999). *Teaching tips: Strategies, research, and theory for college and university teachers*. New York: Houghton Mifflin Company.
- Parini, J. (2005). *The art of teaching*. New York: Oxford University Press.
- Sperber, M. (2005). How undergraduate education became college lite – and a personal apology. In R. H. Hersh and J. Merrow (eds.), *Declining by Degrees* (pp. 131-143). New York: Macmillan.
- Winner, L. (2005, September). Democratic acts: Theatre of public trials. *Theater Topics*, 2(15), 149-169.

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The Androgogy of the Privileged: A Reassessment of The Pedagogy of the Oppressed

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Abstract: The teaching philosophy of many critical thinking teachers implicitly or explicitly draws from the work of Paulo Freire rather uncritically. In this paper, I will revisit the original formulation by Freire and indicate critical ways that the original text needs to be transcended in order to meet the demands of the reality of teaching practice in higher education. Freire prescribed his teaching philosophy for those engaged in the education of people like illiterate workers in Brazil. This paper argues that 'pedagogy' is a misnomer for adult learners and that in any case, college students are far from the oppressed workers of Freire. The paper ends by advocating the collegial model for college education especially in Africana Studies.

Brief Review Of The Literature:

The teaching philosophy of many critical thinking educators implicitly or explicitly draws from the work of Paulo Freire rather uncritically despite some debates about the suitability of the perspective for industrialized countries. In this paper, I will revisit the original formulation by Freire and indicate critical ways that the original text needs to be transcended (as Freire himself invited his readers to attempt) in order to meet the demands of the reality of the culture of learning in higher education (which was not the field of Freire's focus). Freire prescribed his educational philosophy mainly for those engaged in the education of people like illiterate workers and peasants in Brazil (probably predominantly Afro Brazilians), and later, in Tanzania and in Guinea-Bissau. His liberation pedagogy caught on around the world and was adopted in many different disciplines in almost every part of the world. This paper argues that 'pedagogy' is a misnomer for adult learners and that in any case, college students today are far from the oppressed and dehumanized peasants of Freire. The paper ends by advocating the collegial model for college education especially in Africana Studies that emerged as a discipline designed by activist students who are closest to Freire's notion of the revolutionary youth of 1968 who participated in education as part and parcel of the struggle to make history in a progressive sense. Androgogy is the science and art of learning in an adult setting.

Goals And Objectives:

Africana Studies emerged out of the revolution of the 1960s and continues to define itself as a field that privileges critical-activist scholarship that is centered on the experience of people of African descent globally. It may seem paradoxical that I have chosen this field to represent what Freire would call the 'codification' of an alternative interpretation to the pedagogy of the oppressed with emphasis on the maturity of the students, their complete humanity despite attempts at denigration from some quarters, and their privileged location in academia despite the persistence of oppressive practices even in academia itself. Such a paradox dissolves once it becomes clear that Africana Studies from the inception of its institutionalization in predominantly white universities was never intended as a field exclusively for black students and continues to serve as a diversity content for a diverse students population. In addition, even with reference to black students exclusively, it must be acknowledged that they are far from the illiterate peasants of Freire and must be recognized as among the Talented Tenth of WEB Du Bois who are privileged to receive higher learning for the purpose of serving to help and uplift the less fortunate in society. The university is not isolated from, but is reflective of, societies structured in race-class-gender dominance and Freire warned that educators must be careful to combat the will to power that makes the former oppressed peasant aspire to become like the oppressor whenever entrusted with power. Critical scholars must recognize the extent to which we are privileged as cultural activists and avoid oppressive discourses that may contradict our praxis.

Discussions

I had been using Freire in my educational philosophy rather uncritically until I visited a historically black college in the US to give a job talk. The toughest question came from the graduate student who was part of the search committee: he wanted to know how I have gone beyond Freire in the application of his methods or what I would change in *The Pedagogy of the Oppressed*. I had not thought about that question even though in practice I had seen beyond the language of Freire because I was standing on his gigantic shoulders. I responded to the question by saying that I have modified the philosophy of Freire in two ways to fit the reality of higher education today:

First, given the importance that Freire gave to the use of language as a means for the exercise of power, I no longer use the word pedagogy to describe the process of learning because university students, and adult learners in general, are no longer kids to be subjected to the pediatric processes of pedagogy. I referred to the work of Alice Miller, *For their Own Good*, in which she argued that pedagogy as child rearing was predominantly abusive in Western cultures, resulting in the production of amoral monsters like Adolf Hitler. Today, I would prefer the word ‘androgogy’ or ‘Afrogogy’ to the word pedagogy as closer to a description of what we do in higher education. However, this change of words is not adequate without a shift in assumptions given that I attended an ‘Androgogy Workshop’ in the Caribbean and was surprised to hear participants defending the behaviorist approach to teaching which assumed that students were experimental animals to be motivated with grades towards better achievement or be punished to deter bad behavior. I said that I saw my students as colleagues and not as Pavlov’s dogs salivating at the anticipation of sugar lumps. Unlike laboratory animals, grades are not rewards but achievements earned by students and I did not think that I had the authority to withhold or award grades as a mechanism of social control. This challenge to the language of Freire echoes the challenge that feminist theorists like bell hooks (*Teaching to Transgress*) have posed to Freire and also heeds the warning of Molefi Kete Asante that we should replace the language of pathology with the language of victory when we are articulating an Afrocentric pedagogy, hence my suggestion of Afrogogy.

Secondly, the above suggestion also questions the argument by Freire that illiterate adult learners are dehumanized by oppression and exploitation and that his pedagogy of the oppressed is designed to re-humanize them or to make them more fully human. University students are far from the oppressed illiterate peasants in rural Brazil, Tanzania or Guinea-Bissau. They are rather a privileged lot in the sense that they are far from being illiterate, they have a lot of power over their professors at least in the form of classroom assessments, some of them have family allowances that are more than the annual incomes of the professors, some drive some of the most expensive cars while some professors drive broomsticks, and some go on to become rulers of countries while most professors retire with chalk dust fresh on their faces. In this sense, I do not agree with Freire that students, especially adult ones, were less human than intellectuals who arrive with the knowledge of how to humanize them or to make them more fully human. I believe that they remain fully human even when there is an attempt to dehumanize them through oppression. There is no such thing as a less human human being, certainly not in the university; socialization is a better term than humanization. I am confident that Freire himself would agree with everything I have said here.

Africana Studies emerged in the 1960s when Freire was formulating his philosophy of scholar activism and this discipline embodies that philosophy more than most. It was launched by students who were protesting the Eurocentric banking concept of education and demanding critical, activist and Africa centered scholarship. Although entrenched interests resisted the demands of the students and tried to ridicule their preferred philosophy of education, the fact that the discipline has thrived for more than 40 years in the US is an indication of the vibrancy of the approach that Freire recommended. When we admit that the minds of university students are not blank slates, we will be more open to input from the students to the revision of the curriculum, innovation of new fields, discovery of new theories and perspectives. Other emerging fields like Women’s Studies benefited from this Africana approach.

The problem that I would like to pose to educators today is how we tackle the question of decreasing black male participation in higher education. At the invitation of UNICEF Caribbean, Dr. Augustine Agu and I are drafting a Positive Masculinity manual for possible implementation in education globally. Is there such a thing as positive masculinity, what are the empirical ‘codifications’ of progressive masculinity, what role could education play in its reproduction or socialization? To help us to answer these questions, let us visit the website that chronicles the amazing achievements and persisting challenges in Africana history today: <http://www.amistadresource.org/>

Notes

- Peckham, I., 2003, 'Freirean Codifications: Changing Walls into Windows' in *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture*, Vol. 3, No. 2, offers a defense of Freire against critics who suggest that Freire was conscientizing teachers rather than eliciting dialogue about alternative pedagogies, rather Freire should be read as offering a model (codification) for transformation.
- Freire, P. (1970) *Pedagogy of the Oppressed*, tr. M.B. Ramos, New York, p. 24 stated that: 'I will be satisfied if among the readers of this work there are those sufficiently critical to correct mistakes and misunderstandings, to deepen affirmations and to point out aspects I have not perceived. See also, Freire, 1978, *Pedagogy in Process: The Letters to Guinea-Bissau*, tr. C.S.J. Hunter, New York, The Seabury Press.
- Africana Studies is also referred to as African American Studies, Africology, Black Studies, African and African American Studies, and Pan-African Studies. See D. P. Aldridge and C. Young, *Out of the Revolution: The Development of Africana Studies*, New York, Lexington Books, 2000 and Norment, N. (2007) *The African American Studies Reader*, Durham, Carolina Academic Press.
- Hooks, Bell, 1994, *Teaching to Transgress: Education as the Practice of Freedom*, New York, Routledge in which she interviewed herself about how much she was privileged to learn from Freire while critiquing him; and Molefi Asante, *Afrocentricity*, Trenton, African World Press.

Beyond Textbooks: Reading and Collaborative Learning

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Abstract: A love or appreciation for reading is a necessary condition for lifelong learning, and it is through lifelong learning that professionals can seek to continue learning about and improving their fields, even when far removed from a college or university classroom. The focus of this presentation is on the development and use of collaborative learning strategies to encourage the reading (and, equally important, the enjoyment) of non-textbook materials, and the attendant development of critical thinking and promotion of student engagement that result from such strategies.

In 1990, criminal justice scholar Hans Toch wrote: “The most meaningful experience that a student can have... is to fall in love with a book.”¹ But are our students actually falling in love with reading? Evidence suggests not. Data from the National Survey for Student Engagement indicate that 25% of freshmen² reported reading no books, other than those assigned in courses. A report by the National Endowment for the Arts found that almost 40% of college freshmen spent *no time* engaged in *any* pleasure reading each week³. Some students come to college after experiencing what Gallagher calls *readicide*, or “the systematic killing of the love of reading,”⁴ stemming from assessment-driven educational culture and the curricular and pedagogical choices to which it leads. Furthermore, many courses rely on textbooks as the primary, if not exclusive, reading assignments. Research suggests that student completion of assigned textbook readings is (to be charitable) less-than-optimal.⁵ Even if students do read textbooks, Eble suggests that “since so much textbook reading is done under duress, reading either seriously or casually may be one of the casualties of a college education.”⁶ Of course, textbooks are rarely exciting⁷ and even highly-touted learning aids embedded within them have been found not to dramatically impact student performance.⁸

A love for reading, beyond textbooks, is necessary if colleges and universities are to produce lifelong learners who will strive to study and advance their disciplines. The good news is that Tapscott’s research on the learners in this digital era suggests that they have a “capacity and love for lifelong learning.”⁹ However, the days of simply assigning individual book reviews may be past. Millennial students are ambitious and desire accomplishment. In addition, classrooms for millennial students “can offer learning that is more contextual and project oriented,”¹⁰ with an emphasis on group processes. A study based on interviews of over 1,600 Harvard University undergraduate students found that the best classes were those that facilitated team-based problem solving assignments, and that the faculty most highly regarded by students were those who gave engaging assignments encouraging debate and discussion and teaching *how to think* from the perspective of their discipline.¹¹

Collaborative learning is a strategy for achieving the above goals, while integrating meaningful non-textbook readings. Collaborative learning strategies cast faculty as the facilitators of learning (rather than as providers of lecture). Students engage in team-based activities to address a task, which generally requires analytical or problem-solving skills. Students learn interactively (in simultaneous dialogues with each other, the readings, and the faculty member), acquiring content-based knowledge as well as important skills that auger toward lifelong learning.¹²

Description of Practice

The focus of the practice is how to use collaborative learning strategies to develop engaging assignments that also promote a love (or, at least, an appreciation) for reading. This can be done by utilizing collaborative learning pedagogies in conjunction with engaging readings to promote meaningful learning experiences for undergraduate students.

Purpose: To illustrate central course concepts. This assignment functions as a “book club” in which students, in a group, read a book that illustrates concepts central to course content. The focus is on exploring course concepts in an interesting and innovative way. Both novels and non-fiction works are appropriate for this assignment. It is possible for different groups to read different books. Over the course of the semester, students meet to discuss the content of their book, and at the same time prepare a series of reflective journal entries (to which the instructor may respond in an iterative dialogue, closing the intellectual feedback loop). In the writing, group meetings, and class discussions, students consider how the book relates to and illustrates key concepts in the course and ideas important to the discipline. Students can also share their opinions about the issues raised in the reading, allowing for critical thought

about course material. At the conclusion of the book, students can complete a synthesizing activity that explores the implications or lessons of the book for the discipline, for public policy, for personal development, etc.

Purpose: To apply theoretical understandings. Here, the focus is less on exploration and more on application. In class, students study specific theoretical perspectives that explain a phenomenon, behavior, practice, etc. Working in groups, students use readings (again, both novels and non-fictional accounts are appropriate, and different groups may read different books) as a platform for the application and assessment of theoretical perspectives. Drawing upon material in the book, students explore how well selected theoretical perspectives “fit” the situation (also drawing upon scholarly literature for support of their analysis) described in the book, and what those theoretical perspectives suggest about solutions to dilemmas presented in the reading.

Purpose: To stimulate problem-based learning. In this assignment, students reflect on practices or theories outlined in the reading, itself, and consider how they may be applied in other settings. This assignment thus extends the course through the reading assignment and its applications. Non-fictional works and scholarly books (for which students *can* develop love and appreciation!) are most appropriate for this assignment. Working in groups, students use concepts presented in the book to solve a problem posed by the instructor, which can be in the form of a hypothetical scenario, a real-world situation, a case study, etc.

In conclusion, in course preparation, a consideration of the following three questions may prove fruitful in structuring meaningful readings and assignments:

1. What role (if any) should a textbook play in this course?
2. What “on topic” non-textbook readings are available for this subject matter?
3. How can they be integrated to promote student engagement and collaborative learning?

Notes

¹ H. Toch, “Falling in Love with a Book,” *Journal of Criminal Justice Education* 1 (1990): 245-254. Quotation pp. 247-248.

² NSSE, *2009 Frequency Distributions by Major, First-Year Students*, NSSE website, http://nsse.iub.edu/html/overall_results.cfm

³ National Endowment for the Arts, *To Read or Not to Read: A Question of National Consequence*, National Endowment for the Arts website (2007), http://www.nea.gov/research/ResearchReports_chrono.html, Quotation p. 7.

⁴ K. Gallagher, *Readicide: How Schools Are Killing Reading and What You Can Do About it* (Portland, ME: Stenhouse Pub., 2009), Quotation p. 2.

⁵ As one example, see M. A. Clump, H. Bauer, & C. Bradley, “The Extent to which Psychology Students Read Textbooks: A Multiple Class Analysis of Reading across the Psychology Curriculum,” *Journal of Instructional Psychology* 31 (2004): 227-232.

⁶ K. E. Eble, *The Craft of Teaching*, 2nd ed. (San Francisco: Jossey-Bass, 1990), Quotation p. 130.

⁷ See the perspective in Eble, *The Craft of Teaching*, p. 126, “There are bad texts – which someone else writes – good texts – which we write – and perfect texts – which we plan to write some day.”

⁸ For instance, see R. A. R. Gurung, “Pedagogical Aids: Learning Enhancers or Dangers Detours?” *Teaching of Psychology* 31 (2004): 164-166.

⁹ D. Tapscott, *Grown Up Digital: How the Net Generation is Changing Your World* (New York: McGraw-Hill, 2009), Quotation p. 148.

¹⁰ N. Howe & W. Strauss, *Millennials Go to College*, 2nd ed. (Great Falls, VA: LifeCourse Associates, 2007), Quotation p. 116.

¹¹ R. J. Light, *Making the Most of College: Students Speak Their Minds* (Cambridge, MA: Harvard University Press, 2001).

¹² See B. L. Smith & J. T. MacGregor, “What is Collaborative Learning?” in *Collaborative Learning: A Sourcebook for Higher Education*, eds. A. S. Goodsell & B. L. Smith (University Park, PA: National Center of Postsecondary Teaching, Learning, and Assessment, 1992), 10-29 [Retrieved through ERIC database].

Cells To Society Journal Club: Challenging Undergraduate Students To Think And Act Like Professionals.

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Deborah J. Good, *Human Nutrition, Food and Exercise*

Stephanie Riviere, *Human Nutrition, Food and Exercise*

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Abstract: The purpose of a journal club is to provide students the environment and opportunity to discuss research articles from peer reviewed journals with other students. These discussions should provide a safe environment where participants begin to learn and use the vocabulary of their field in the context of current research. Journal clubs are frequently run in graduate and allied health professional schools. Professionals in the field and faculty working across disciplines often use journal clubs as a form of continuing education. The concept of the “Cells to Society Journal Club” is to emphasize the span of basic to applied research as it relates to the broad field of obesity, nutrition, exercise and health. Weekly journal club meetings were used to evaluate the robustness of the study methodology, results and to address limitations of the work. Students participating in these discussions increased their awareness of the opportunities for research in the field and strengthened their background knowledge base, such that they became more comfortable talking about a range of topics from basic to applied research. Ultimately participation in a journal club should be an intellectual but enjoyable time.

Journal clubs have been used as a method of teaching evidence-based medical practices for several decades (Carpenter, Katz, and Char, 2006). Medical residence programs in a variety of specialties acknowledge that “*unless one reviews scientific papers frequently, often one can recall only a few of the nuances that constitute good research, such a large “n” and randomization of subjects*” (Atzema, 2004). Many students who have selected a major are often enthusiastic to get involved in research or hands-on experience in the field but may be less motivated to establish the knowledge foundation necessary to critically evaluate research and identify a significant research question. Prince et al. ⁽³⁾ confirm that the communities of practice concepts can be used to structure journal clubs as interactive, problem-focused sessions. While undergraduate students are sometimes introduced to peer-reviewed journals, it is often in the context of an individual assignment. Providing an environment for students to discuss scientific literature on a regular basis may help to foster inquiry-based learning. Roberts reported a deeper appreciation for scientific research and an increased confidence in one’s ability to read scientific literature through the incorporation an undergraduate journal club experience into their curriculum (Roberts, 2009). For students not currently engaged in research, a journal club can provide an environment to explore various topics, to begin to identify a research area that interests them, and to network with individuals who can assist them in identifying a research mentor.

It was in the context of an undergraduate summer research program that we initially identified the need for a weekly journal club. The journal club was modeled after ones that we had been involved with as graduate students and faculty. The size was kept small (4-5 students/group) to ensure that each group member had an opportunity to participate without easily deferring to the more vocal individuals in the group (Figure 1). The small group numbers also allowed flexibility in identifying a group time and location. The initial journal clubs run during the summer program were successful, and thus, two additional journal clubs were run during the academic year. In order to provide some additional guidance, graduate students, or undergraduates who had previously participated in a journal club were

Figure 1: An example of a typical undergraduate journal club meeting. Note that there are five students who are actively engaged in reviewing the article, which is in electronic format for some and paper format for others. During this journal club students used internet access to immediately find a YouTube™ video showing mice performing a behavioral test used in the paper.



recruited to facilitate the group meetings. These facilitators were not expected to be experts with all the answers but rather helped to model how to seek out answers through a variety of resources. Facilitators also helped to get the group back on task when tangential discussions inevitably strayed from the topic of the research. Each meeting focused on one article pre-selected by any member of the group. The point of the discussion during the weekly journal club meetings was to evaluate the robustness of the study methodology, results and to address limitations of the work.

The workshop held during the CIDER Conference provided a simulation of a journal club facilitated by one of the authors of this paper. Small groups with a designated “group facilitator” critiqued a recent peer-reviewed journal article which described the prevalence of metabolic syndrome and insulin resistance in Division I football players (Borchers, Clem, Habash, Nagaraja, Stokley, and Best, 2009.) Although many of the workshop participants were initially intimidated by the complexity of the article, a 20-minute journal club-like discussion resulted in the majority of the participations stating that they now could understand and critique the article. Participants agreed that the group setting simplified the understanding of complex ideas, even for individuals from non-life science disciplines.

Journal clubs are not a new concept in teaching and learning but they often seem to be reserved for graduate and professional programs. There is no reason why undergraduates cannot participate in journal clubs. In the context of 2009 USDA Scholars Summer Research Program the journal club was mandatory for the ten student participants. We are beginning to pilot the offering of a journal club open to all students through the Human Nutrition, Foods & Exercise department. Participation is voluntary and participants will be enrolled in a 1 credit (Pass/Fail) special study course for the spring 2010 semester. In many ways this can be viewed as the equivalent of weekly language study gatherings where the language of focus is exclusively spoken (i.e French Table) in a casual but structured atmosphere. Learning the *language* of the field and terminology of research can help to develop their intellectual depth, breadth and the capacity to integrate formal study with independent and group reading of the research literature. Weekly practice of critically evaluating research combined with peer discussion helps to develop critical thinking skills and develop a self-image as a budding professional in the field. Ultimately journal club should be an intellectual but enjoyable time.

References:

- Atzema C. (2004). Presenting at journal club: A guide. *Annals of Emergency Medicine*, 44(2), 169-174.
- Borchers J. R., Clem K. L., Habash D. L., Nagaraja H. N, Stokley L. M., & Best T. M. (2009). Metabolic syndrome and insulin resistance in division one collegiate football players. *Medicine & Science in Sports & Exercise*, 41(12), 2105-2110.
- Carpenter C. R., Katz E., & Char D. (2006). Journal club and teaching evidence-based medicine. *Journal of Emergency Medicine*, 31(3), 306-307.
- Prince D. W., & Felix K. G. (2008). Journal clubs and case conferences: From academic tradition to communities of practice. *Journal of Continuing Education in the Health Professions*, 28(8),123-130.
- Roberts J. (2009). An undergraduate journal club experience. A lesson in critical thinking. *Journal of College Science Teaching*, 38(3), 28-31.

Constructivist Approaches to Education: Fostering Student Construction of Knowledge

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Abstract: Wherever school learning is discussed it is a good bet that the concept of constructivism and constructivist teaching will appear somewhere in the conversation. The basic notion of constructivism is that learners, either as individuals or members of social groups, are always involved centrally in creating their own knowledge. This view contrasts sharply with the idea that learners are mostly receivers of already structured content, which seems to be an entrenched position given the way instruction is enacted in so many classrooms. This interactive practice session will highlight three main points of interest with respect to constructivist approaches to education. First, the basic foundational framework will be shared including identification of influential scholars. Secondly, constructivist classroom practices will be compared with traditional forms of teaching, and will consider specifically the changing roles of teachers and students. Finally, we will share some of the controversy surrounding this topic as some scholars have staked out decidedly radical positions that concern not only pedagogy but also basic views of knowledge itself. Presenters will explain and demonstrate practical and engaging strategies for guiding current and future teachers in how they may achieve a constructivist environment in their own classrooms. This framework may be used in any discipline and with students at any level.

Reflections

The session started out with an interactive discussion on the fact that people have different meanings for different words and topics depending on their prior experiences. After defining constructivism, we discussed the differences between individual and social constructivism. From there we moved into the historical scholars who influenced constructivism in order to give folks a background of how this theory originated. At that point, we moved into more applicable approaches educators can take to apply constructivist principles in their classroom by disclosing what some of the literature tells us about this complex theory. Teaching strategies as well as video clips of “active” learning versus “passive” learning were showed to give participants a better idea of what type of teacher they want to be. Overall, our contribution to the conference proved to bring awareness of constructivism to the forefront.

Creating an Interdisciplinary Experiential and Service Learning Project: Building The Big Build

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For this presentation, we share how collaborative relationships provided for the creation of an interdisciplinary experiential- and service-learning project. The Big Build, an on-campus house build service project, provides a forum for students to actively participate in decision-making, and, thus, develop leadership skills through its coordination. By volunteering with The Big Build, students join together in a common goal of serving the community and also increase their awareness of green housing, sustainability, and housing affordability. As the project advisors, we will also discuss the design of the house. It was an interdisciplinary experiential-learning process. Furthermore, our discovery of the importance of building partnerships, or coalitions, among university departmental personnel and community stakeholders will be presented. For the practice session, we will facilitate a role-playing exercise that models the interactive decision-making process. This exercise will demonstrate the various roles assumed by the student leaders. As with the foundation of service learning, the session will conclude with time allotted for reflection and open discussion. Participants will be given an opportunity to provide feedback on how to improve upon this experience, current and future. The presenters will also discuss visionary information on making this an annual service project.

Critical Analysis of Service and Learning in “Service Learning”

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Abstract: Although educators are not in agreement about how best to facilitate civic engagement across diverse curricula, considerable attention in the past decade has focused on multiple aspects of service and service learning. Unlike internships that are similarly experiential, service learning emphasizes both course learning objectives and addressing community needs that are otherwise unmet. Typically, service as civic engagement makes claims to “give back” to underserved communities and enhance student learning with applied work. Initial research suggests there are conflicting intentions and aspirations at work through service learning in higher education (Vogelgesang, 2003) and implementation calls into question: (1) who or what is served; (2) if service enhances both student engagement of course content and retention (e.g. Mobley, 2007); and (3) faculty assessment in the eyes of the university evaluation system (e.g. Chesler et al., 2006). Although in the preliminary stages, our research on service learning at colleges and universities investigates these questions and multiple sociological correlations among race, gender, social class, institutional status, and student learning/retention. Taking up our research questions at three analytical levels we identify the political origins of service learning in a cultural context, institutional responses, and the consequences for department, faculty, students, and course implementation.

At the macro-level we may place universities’ embrace of service learning as a response to political and economic imperatives in several contexts (Kezar & Rhoads, 2001). The social movements of the 1960s and 70s, in conjunction with academic critiques of positivism and dominant discourse, promoted curricular changes that gave voice and attention to underrepresented communities. Second, under the Reagan administration social services began the decades-long decline as the president infamously said, “Government does not solve problems, it subsidizes them,” and the foundation for reorganizing fiscal expenditures and the tax structure was set in motion. “Compassionate” economic conservatives soon recognized the need for volunteer services and crafted a “thousand points of light” campaign calling for “duty, sacrifice, commitment, and a patriotism that finds its expression in taking part and pitching in” (George H.W. Bush inaugural address, 1989). Today, carrying these values forward, the Obama administration frames both the September 11 remembrance and Martin Luther King Day as national days of service. Those promoting the combination of service and formal education have not had to struggle to find a shared vision between liberals and conservatives, red states and blue states, big business and community activists. Seemingly, service learning stake holders have negotiated alliances and produced a consistent American service narrative that manages multiple agendas. Our research seeks to reconcile the underlying ideology with data that explains the consequences and outcomes of service learning.

At the middle level of analysis, higher education responded to public criticism that asserts colleges are lacking in curricular relevance, commitment to teaching, and responsiveness to the larger public good - with service learning initiatives. Administrators worked on difficult implementation and evaluation issues and organizations emerged to facilitate “best practices” with peer reviewed journals, blueprints, how-to manuals, and industry experts in applying service learning across diverse curricula. Organizational theorists identify this form of standardization and its corollaries as institutional isomorphism (DiMaggio & Powell, 1983). Whether through mimicry, which finds colleges replicating successful service programs, or coercive practices where funds, awards, and positive publicity are tied to implementation – most institutions have made a commitment to service learning. When we ask - “who is served?” - we are often thinking about constituents in the community, but we must also question how colleges and universities are served by implementing service learning programming.

Consistent with organizational theory, at the micro-level we question whether or not service learning initiatives are implemented regardless of their effectiveness. While products of the growing service learning industry can be terribly convenient for organizations that are hoping to incorporate service learning into the mission of their schools, assessment is often lacking in analysis of efficacy for communities. There is so far anecdotal, yet growing negative response from constituents for whom service is intended (e.g. Strom, 2010). Many community groups are suggesting that the influx of college students with academic course credit-driven participation is detrimental to their missions.

Further, several studies suggest that service learning may reinforce students' negative stereotypes (Endres & Gould 2009). Implementing institutionally derived and universal plans for service learning, without regard to context, may have unconstructive latent consequences with negative repercussions.

Many individual faculty and departments took note of the 1987 Boyer report that claimed there is "a disturbing gap between the college and the larger world." Describing the university experience and spirit as parochial, and with "...an intellectual and social isolation that reduces the effectiveness of the college and limits the vision of the student" (6) the report demanded a curricular response. "Today's undergraduates urgently need to see the relationship between what they learn and how they live. Specifically, we recommend that every student complete a service project-involving volunteer work in the community or at the college.... The goal is to help students see that they are not only autonomous individuals but also members of a larger community to which they are accountable" (Boyer, p. 218). Our research questions, ideologically, what kind of civic engagement emerges with exposure to underserved communities, then reflection of the experience.

References

- Boyer, E. (1987). *College: The undergraduate experience in America*. New York: Harper & Row.
- Chesler, M. A., Ford, K. A., & Charbeneau, J.M. (2006). Peer facilitators as border crossers in community service learning. *Teaching Sociology*, 34(4), 341-356.
- DiMaggio, P.J., & Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160.
- Endres D., & Gould M. (2009). "I am also in the position to use my whiteness to help them out": The communication of whiteness in service learning. *Western Journal of Communication*, 73(4), 418-436.
- Kezar, A., & Rhoads R. A. (2001). Service learning in higher education: A philosophical perspective. *The Journal of Higher Education*, 72, 148-171.
- Meisel, J. S. (2008). The ethics of observing: Confronting the harm of experiential learning. *Teaching Sociology*, 36, 196-210.
- Mobley, C. (2007). Breaking ground: Engaging undergraduates in social change through service learning. *Teaching Sociology*, 35(2), 125-137.
- Strom, S. (2010). Does service learning really help. *New York Times*. Retrieved from <http://www.nytimes.com/2010/01/03/education/edlife/03service-t.html?emc=eta1>
- Vogelgesang, L. J., Drummond, M., & Gilmartin, S. K. (2003). *How higher education is integrating diversity and service learning: Findings from four case studies*. San Francisco: California Campus Compact.

Decentralized Teaching and Learning: Intentionally Designing the “Box” to Work

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Abstract: “As one student put it, ‘our professors tell us to think outside the box, and then they put us in a box to do it’” (Steelcase, 2008). How then do we design the “box” to better fit instructional and learning needs? Robert Barr and John Tagg (1995) introduced the “learner-centered” theory to explain a paradigm shift from “teacher-centered” [also known as the Instructional Paradigm] (Barr, 1995) This seminal work helped educators recognize that the relevance of the Industrial Age [row-by-column classroom layouts] was passing and a new approach to learning and teaching was needed. Instructors have begun using innovative technologies to encourage engagement and interaction, yet many instructors, particularly in higher education, are still not equipped with the knowledge of how to design courses, how to appropriately integrate technologies to support their pedagogical goals, or how to identify or arrange the physical environment in which they teach to help achieve their instructional goals. The recent introduction of “decentralized” (Terry, 2009) learning environments challenges teachers and learners alike to rethink the overall design of the classroom as a tool; that size, shape and geometry matter when interaction is a teaching goal. This team will share how environmental barriers can be removed when three elements are combined: instructional design, integrative learning theories, and intentional interior design practices.

Literature Review

“...if you take a look around many college campuses today, you’ll notice that the typical classroom remains a throwback to the past: desks lined up in precise order, a podium set in front, and a writing board bolted to the wall. Remove the occasional projector and the computer hook-up, and the classroom of [today] looks pretty much the same as the 1957 model. Once class starts, students realize soon enough what’s wrong with an Eisenhower-era classroom” (Steelcase, 2008).

Since the theory “learner-centered” (Barr, 1995) was introduced it has made in-roads into academic programs as many instructors in higher education strive to include active engagement with and for their students. Instructors have begun using innovative technologies to encourage engagement and interaction, yet they are not equipped with the knowledge of how to design courses, how to appropriately integrate technologies to support their pedagogical goals, or how to identify or arrange the physical environment in which they teach to help achieve their instructional goals (Scott-Webber, 2004).

Instructors frequently rely on the notion of learning styles to achieve optimal results in the classroom. However, although learning styles do address the modalities by which students prefer to learn, the literature and practices that address cognition, or how students are able to learn, is often overlooked. Instructors have recognized for years, if only anecdotally, that even if their instructional design processes incorporate certain constructivist and/or collaborative learning methodologies, these processes have to be “thrown out the window” if scheduling provides an inappropriate learning setting to support the pedagogical need. Thus, the environment becomes the barrier.

The learning environment contains a variety of physical and psychological factors that affect the quality of learning. Psychological issues include crowding, density, territoriality, control, and personal space. Physical issues include lighting, acoustics, noise, temperature, humidity, and ventilation (Kopec, 2006). The size of the room along with the arrangement of furniture, storage, and equipment as well as the materials and colors used all affect feelings of comfort and readiness to learn. A new spatial layout is necessary.

Decentralized Learning Spaces

In 2007 a new model of learning space was created and tested (Steelcase, 2007) and is now making its way to institutions of higher learning. It is an interactive learning space, this team calls “decentralized learning”, digitally enhanced teaching and learning environment and one that takes the “stage” away. No longer is there a front of the room. No longer is there a “bad seat in the house.” The instructor is truly the “guide on the side” and not the “sage

on the stage.” The geometry of the room is square, with triangulation used for multiple media presentations and viewing planes. Instructors and students look in the door and “know that something very different will occur here.” [a student’s comment]. The space and its furnishings invite permission to be more engaged, interactive, as well as more egalitarian. Everyone has a stake in the learning process and active learning is the practice norm in intentionally designed interior spaces.

References

- Barr, R. (1995). From teaching to learning: A new reality for community colleges. *Leadership Abstracts*, 8(3).
- Barr, R., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education, *Change*, 27, 12-25.
- Kopec, Dak (2006). *Environmental psychology for design*. New York: Fairchild Publications, Inc., p 189.
- Scott-Webber, L. (2004). *Environment behavioral theories and the design of learning spaces*. Michigan: The Society for College and University Planning.
- Steelcase (2007). LearnLab™ a prototype for interactive learning spaces. Steelcase Inc. MI.
- Steelcase (2008). Retrieved January 10, 2008, from <http://www.steelcase.com/na/files/66baf84a27b4d469afa9992982a206c/Full%20version%20of%20article.pdf>
- Terry, K. (2009). First coined “decentralized learning” at an iLAB Research Center meeting.

**Defining “Success” in Field Experiences before Student Teaching:
Assessing and Supporting Preservice Teachers**

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Abstract: This practice is a process of evaluating prior knowledge, assessing proficiency and scaffolding development of preservice teaching in practicum field experiences (prior to student teaching) to increase the probability of student success. The process is established around a framework of five areas of knowledge and skills I believe preservice teachers should develop prior to student teaching: content knowledge, pedagogical knowledge, understanding children’s growth and development (including understanding diversity), classroom management, and written communication. Each area is viewed on a scale that ranges from “novice” to “proficient.” Most students enter a teacher preparation program in the novice stage. Through good teaching and effective support systems, they progress toward an evaluation of “proficient” at the conclusion of student teaching. However, if some students lack even minimal level knowledge or experiences, they will take longer to progress to the “proficient” stage. This session will focus on the three aspects of this process employed with preservice teachers prior to their first practicum (however, this process is actually implemented over three points in the semester: before starting to teach, mid-semester of teaching and at the conclusion). The first aspect is gathering information about the background and experiences students bring to their first teaching experience. This information is collected through informal data gathering techniques such as surveys, interviews and a written “educational life” biography at the beginning of the semester prior to their first day in a classroom. Part two of the process involves evaluating this information using a set of rubrics, one for each knowledge/skill area, with a scale ranging from “novice” to “proficient.” Most students possess knowledge/skills that reflect the novice stage, which is an appropriate beginning point for a first teaching experience. However, some students will demonstrate knowledge/skills beyond the novice stage, while a few will have very minimal knowledge/skills which place them in a pre-novice stage. For example, in the area of classroom management, a student in a novice stage will have had one or more of the following experiences: babysitting on a regular basis, caring for younger siblings, or serving as an assistant for a youth sport. A student in a pre-novice stage, without any prior experience, may be overwhelmed with tasks of managing time or providing focus for young children and this, in turn, could impact success in the practicum classroom. A third aspect of the process is supporting students’ growth. Students at the beginning of the semester who fall into a pre-novice stage in any area will be guided toward participation in specific activities and experiences. For example, to increase knowledge about classroom management, I would suggest that a student schedule several classroom observations with teachers I consider experts in this area. Another suggestion would be to volunteer in an after school program.

A Demonstration of Experiential Andragogy: Teaching Community Practice by Using the Participatory Education Model

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Abstract: One goal of the Masters program in Social Work at Radford University is to produce students who are competent to intervene at the community level; therefore, one course in our curriculum is solely focused on assessment and intervention at the community level. In addition to the academic foundation, since this is an advanced practice course, we also want students to learn the appropriate practice skills to intervene with communities. I teach the participatory education model (Castelloe & Watson, 1999) to the students, and the students practice using it in the classroom. Students are divided into groups, according to the surrounding communities in which they reside. Each student actively participates in the exercise both as a community resident (examining community realities and community possibilities), as well as taking turns facilitating the class. The classes progressively build by beginning with a focus on community strengths, and moving to exploring community problems and their root causes. From there the focus moves to what the community is already doing to address the root causes and what else could be done to address the problems. According to Knowles (1990), adults bring rich life experiences to the classroom. Andragogy that allows them to reflect on their experiences is more likely to be successful. By using the participatory education model in the classroom, students are not role playing; they are engaged in the exercise as a participant, drawing on their experiences as a citizen, and applying that to the academic content. This model of teaching serves to integrate both social work theory and adult learning principles.

Literature Review

Social work teaches empowerment theory and the participatory education model exemplifies this theory in practice. Croft and Beresford (as cited in Payne, 2005), state that empowerment is one of the elements of participatory practice and it “involves challenging oppression and making it possible for people to take charge of matters which affect them” (p. 301). This is a core goal of social work practice. Paulo Freire developed the participatory education model in group settings where people broke their isolation through consciousness-raising dialogue (Carroll & Minkler, 2000). Again, this is very compatible with social work practice. According to Castelloe and Watson (1999), the Freirian approach to education allows teachers to see students as people who can recreate the world. The teacher and the students are co-learners who dialogue, brainstorm, make decisions, and act in the world. Further, the purpose of this type of education is to help participants learn from their experiences and analyze the society in which they live. The energy necessary for collective action emerges out of this experience. This model also aptly illustrates the strengths perspective that is part of the foundation of social work practice.

The participatory education model is appealing to anyone who wants to use the principles of andragogy. If we believe that adults learn best experientially, this model is a perfect match up with the theoretical constructs. If we believe that adults enjoy learning that has immediate value to them, the participatory education model engages them in learning skills for practice. In the participatory education model, the instructor is a co-learner, as well as, providing resources from the sidelines. This is very congruent with the principle of andragogy that defines the proper role of the instructor as - not so much teacher - as it is to be a “facilitator of learning” (Knowles, 1990, p. 180).

Description of the Classroom Assignment

This is the outline of the learning module and skill building assignment that I use modeled on the work done by Castelloe and Watson (1999).

- Step A: Teach the model – theory and significance
- Step B: Have the students self-identify into the communities in which they reside.

If students are recent transplants to the local area, they will need to use their “home” community for this exercise. If the students are from very diverse regions, one can simplify this to rural/urban communities. The

instructor models community practice by using an ice-breaker, and asking each group identified to develop a list of community strengths. The instructor has the group ask one person to put their list on a large sheet of paper and has the group identify yet another person to report out to the larger group.

- Step C: Now you have “told and shown”. The students need to “do”.
In the next class, the first group develops an ice-breaker and facilitates a discussion. They must set up the room in a manner that contributes to community building. They develop a visual method for each group to display their results. Each group facilitates a discussion on one aspect of community life (problems; root causes of the problems; dreams; steps towards dreams). The groups are videoed by instructor as they facilitate and each individual member is expected to reflect on the experience in written form to the professor. The groups are also responsible for developing an evaluation tool in order to gain feedback from their peers regarding their demonstration of leadership. This feedback is incorporated into the reflection to the professor.
- Step D: The academic integration is completed at the end of the semester when each group concludes their work with the participatory education model by summarizing the information, focusing on the identified priority for community growth/change, and elaborating on one proposed community intervention for change which is grounded in the scholarly literature. This information is presented in a collaborative group power-point.

Conclusion

Although I have presented a very specific example of experiential learning/andragogy, this type of teaching can be used across disciplines. Skill-building can often be facilitated by experiential exercises in the classroom. This quote is not original with me, but I think it is very true: “If a picture is worth a 1,000 words, then an experience is worth 1,000 pictures” (author unknown).

References

- Carroll, J., & Minkler, M. (2000). Freire’s message for social workers: Looking back, looking ahead. *Journal of Community Practice*, 8(1), 21-36.
- Castelloe, P., & Watson, T. (1999). Participatory education as a community practice method: A case example from a comprehensive head start program. *Journal of Community Practice*, 6(1), 71-89.
- Knowles, M. (1990). *The adult learner* (4th ed). Houston, Texas: Gulf Publishing Co.
- Payne, M. (2005). *Modern social work theory* (3rd ed). Chicago: Lyceum.
- Wlodkowski, R. (1999). *Enhancing adult motivation to learn: A comprehensive guide to teaching all adults*. San Francisco: Jossey-Bass Publishers.

Does Providing the Instructors' Lecture Notes Result in Increased Performance in University Settings?

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Abstract: Since the advent of PowerPoint and course delivery programs like Blackboard, more instructors in higher education are providing students with outlines of their lectures and expecting students to supplement these with their own notes. Although some researchers have found that instructor-provided notes appear to enhance student learning, others suggest that students benefit from the act of taking detailed notes since it engages them in the learning process. While controlling for fidelity of lecture delivery, the authors examined the impact of providing instructor notes. Analyses revealed that pretest scores were significantly correlated to posttest scores and that students who did not receive instructor-provided lecture notes received statistically significant lower posttest scores than students who received instructor-provided lecture notes before or after lectures.

Despite innovations in instructional technology, class lecture remains the primary method to communicate course content to college students. It is commonly held that, by taking notes, students deepen their understanding and relate lecture topics to current knowledge, which, in turn, may positively influence their academic performance (Brazeau, 2006; Castello & Monereo, 2005). Despite the fact that student-taken notes may be beneficial, a number of college students have weak note taking, analytic and organizational skills (Cukras, 2006) and may find instructor-provided lecture notes useful. This session shared the results of a study (Raver & Maydosz, in press) that examined the effect of instructor-provided notes on an increasingly diverse student population.

One hundred and fifty-four students enrolled in an introductory special education course at an urban, public university located in a southeastern state in the United States participated in the study. Three intact sections of the class were randomly assigned to one of three conditions: (1) *no notes* (no instructor-provided lecture notes were available), (2) *notes after* (instructor-provided lecture notes were available during the final 5 minutes of the class meetings), and (3) *notes before* (instructor-provided downloadable lecture notes were available before lectures). During the study, all sections of the class received identical course content and instructional delivery style through the use of prerecorded DVDs of another instructor teaching the course. A pretest was administered before the content was introduced and the same test was given as a posttest after the target content had been taught. The instructor-provided lecture notes given to students in the notes after (condition 2) and notes before groups (condition 3) were "full notes" in that they contained each lecture's main ideas with some details, and provided space for note-taking if students opted to do so. The instructor-provided notes were delivered in PowerPoint slides and in outline formats via the Blackboard course websites. The study spanned the first half of the semester.

Analyses revealed that pretest scores were significantly correlated to posttest scores and that students who did not receive instructor-provided lecture notes received statistically significant lower posttest scores than students who received instructor-provided lecture notes before or after lectures. A Pearson correlation analysis revealed that pretest scores were significantly correlated to posttest scores, $r^2 = 0.307$ with statistical significance $< .001$. Both pretest scores and type of lecture note distribution were statistically significant in an ANCOVA predicting posttest scores, with p-values of $< .000$. After controlling for pretest scores in the ANCOVA, the participants who did not receive instructor-provided notes (condition 1) had statistically significantly lower posttest scores than those who received notes before, condition 3, or after the lecture, condition 2. Participants who were not given instructor-provided lecture notes (condition 1) had posttest scores that were an average of 5.408 points lower than those who received notes before the lectures (condition 3) and an average of 6.837 points lower than those who received notes after lectures (condition 2), after adjusting for pretest scores. There was no statistically significant difference between the posttest scores of participants in the notes before group (condition 3) and participants who received notes after lectures (condition 2).

The present study encountered some limitations which may influence the generalizability of the results. Participants were able to opt out of the study, which could be a threat to the validity of the results. Since intact class sections were used, the observed group differences might be the result of student differences, class time, or the number of class meetings. The participants were not asked if they reviewed their own notes and/or instructor-provided notes in

preparation for the posttest, and no formal attendance data were collected. Further, it is possible that different outcomes may have been observed if the study had been conducted for a full semester.

The outcomes of this study suggest two immediate implications for teaching in higher education settings. First, it appears that instructor-provided notes, in the form of lecture outlines with some supporting details, can have a positive influence on student learning as measured by multiple choice exams. Notes given by instructors will be more precise than students' personal notes and for this reason may serve as a better guide to the content to be learned. Providing these notes does not appear to inhibit students from adding their own notes, in which they synthesized or added to the material the instructor was teaching. Second, making instructor-provided lecture notes available either before or after the lectures appears to be equally effective in facilitating learning. As more students receive instructor-provided lecture notes as a standard component of online and distance education courses, students may come to expect instructor notes as just one aspect of any well-organized course. Due to the faulty note-taking skills that some students exhibit, students may achieve optimal performance if they are provided with instructor-developed notes and encouraged to supplement them with their own notes.

Although the value of instructor-provided lecture notes is becoming better supported by research, the utility of full versus partial notes, and how instructor-provided notes may actually influence learning is far from conclusive and should be addressed by research in the future. Additionally, future research should examine whether the value of instructor-provided notes is influenced by the content that is being taught. Further, instructors continue to need more guidance in how to develop effective ways for building a deep understanding of the material they teach and how to assist students in learning how to apply this content in meaningful ways. In the future, research should focus on these issues and attempt to identify the level of detail required to allow instructor-provided notes to enhance, but not inhibit, independent learning. Considering the diverse nature of the skills and abilities of students entering universities today and the importance of their success, all available measures should be taken to improve students' academic performance. Students in colleges and universities should not have to face additional struggles because their instructors continue to avoid the use of evidence-based strategies when they teach.

References

- Brazeau, G. (2006). Handouts in the classroom: Is note taking a lost skill? *American Journal of Pharmaceutical Education*, 70(2), 1-2.
- Castello, M., & Monereo, C. (2005). Students' note-taking as a knowledge-construction tool. *Educational Studies in Language and Literature*, 5, 265-285.
- Cukras, G.G. (2006). The investigation of study strategies that maximize learning for underprepared students. *College Teaching*, 54(1), 194-197.
- Raver, S. A., & Maydosz, A. (in press). Impact of the provision and timing of instructor-provided notes on university students' learning. *Active Learning in Higher Education*.

The Effect of Multi-Modal Reflection on Practice

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Abstract: This work focuses on the role of technology in facilitating reflective practice, specifically the role of multi-modal reflective practice within e-portfolios for preservice teachers. Reflective practice has been established as a critical tool for developing teacher identity in and on their teaching practice. While recent scholarship continues to advocate for providing preservice teachers with opportunities to exercise reflective practice, the authors attempted to investigate a framework of reflective practices in order to construct assessments for reflective practice. The purpose of the study was to examine how music education and English education preservice teachers use reflective practice, both in written form (blog) and video format (vlog) and to devise a rubric that could be used across the two disciplines to assess students' levels of reflective practice based on the findings of the study. The findings of this study indicate that levels of reflective practice are different, depending on the type of modality utilized. The results provide support for the use of technology, specifically vlog reflective practice in e-portfolio, which in this case elicited deeper reflective practice with preservice student teachers.

Overview

This session presented initial findings from a multi-disciplinary, qualitative research study of preservice teachers' reflective practice during the 10 week student teaching semester. Analysis of participant's written blog and video-recorded vlog entries revealed that where all participants regularly engaged in surface reflection to support pedagogical descriptions, describe teaching context and make quick observations, instances of pedagogical reflection occurred only within the vlogged entries. Further, findings revealed that the nature of the feedback and comments received during the semester impacted both the community of practice and the students' use of their blog/vlog reflections.

Research questions included:

1. How do preservice teachers exercise reflection within vlogs and/or blogs?
2. How does their reflective practice inform and impact their instructional practice?
3. How does this pedagogical approach structure opportunities to learn from experiences in the field?

Theoretical Framework

Research in teacher education has emphasized the importance of reflective practice in leading preservice teachers to restructure prior understandings and refine pedagogical thinking (Schon, 1987; Calandra, Gurvitch, & Lund, 2008). This is especially critical during the field experiences. As Posner (2005) argues, "if preservice teachers do field experience without thinking deeply about it, if [they] merely allow [their] experiences to wash over [them] without savoring and examining them for their significance, then [their] growth will be greatly limited" (p. 3). Larivee (2008) built on the work of Schon (1987), Dewey, and others by identifying four key areas of teacher's reflection: pre-reflection (i.e., asking "where is my classroom on this hallway?"), surface level (i.e., asking "how do I cover predefined objectives/standards?"), pedagogical (i.e., asking "how does my pedagogy impact pupils' learning?") and critical (i.e., asking "how will this strategy or approach affirm my students with different cultural backgrounds?"). Where recent scholarship in the field continues to advocate for providing preservice teachers with opportunities to exercise reflective practice to unpack field experience and exercise pedagogical content knowledge, few studies have explored the kinds of reflection preservice teachers engage within or how that thinking influences or informs actual practice.

Also of note in this work are the tasks/prompts and expressive modes used to capture reflective thinking. Where methods courses typically have included written, print-only reflections to exercise and engage preservice teachers' reflective thinking (Smagorinsky & Whiting, 1995), these approaches are subject to selective memory and lack of supportive evidence (Yerrick, Ross & Molebash, 2005). This study aims to leverage the unique capacities of weblogs and digital video "vlog" entries in an attempt to both address these problems in existing methods and to provide all cohort participants' access to the work of their peers. In doing so, feedback is made possible between professor and student but is extended to include additional faculty, authors/practitioners studied in the methods courses, cooperating teachers, and, perhaps most significantly, peers in the program cohort. Here, preservice teachers' reflective thinking is presented in multiple modes,

allowing for “a different system of signification, one that transcends the collective contribution of its constituent parts” (Hull & Nelson, 2005, p. 225).

Methods and Data Analysis

During the spring 2009 academic term, students in the secondary English education, secondary history/social sciences education and k-12 music education programs were required to complete a written or video-recorded reflective blog post across each of the 10 weeks of their student teaching placement. The data corpus also included all comments received on each post, “BOB” (blog about the blog) entries, end-of-semester evaluation comments, eportfolio contents/reflection, hearing/defense transcripts and view counts/comments/ratings on vlogs linked from YouTube.

Erikson’s (1996) analytical induction methods was used throughout data collection as the method of analysis given the study focus on capturing/accessing participant meaning making perspectives and description of ecological factors impacting their work. Findings were developed in the form of empirical assertions “that vary in scope and in level of inference” and anchored with an evidentiary warrant (Erikson, p. 146). Nvivo was used to support iterative reads and cross-reader consistency and reliability. (Note: For this paper, assertions are included in the overview.)

Discussion

As discussed throughout the presentation, findings established that blog/vlog entries provided a means for supporting multimodal composition and reflective practice. Where different “levels” of reflection were seen in those entries that were print-based (blog) rather than multimodal (vlog), the key finding pointed to the development of teacher’s identity/voice in “layers.” Teachers who were able to demonstrate the higher levels of reflective practice did so by developing a surface level observation (i.e., describing a planned lesson) into new learning that informs subsequent teaching. As such, surface reflection is necessary and not just a “lower-level” practice. Further, the community fostered within the blog (and evident within feedback on each post) was a critical component to students’ engagement and development within the reflective work. Future studies will include discourse analysis across entries and semiotic analysis of individual entries in order to look at how meaning is conveyed.

References

- Calandra, B., Gurvitch, R., & Lund, L. (2008). An exploratory study of digital video as a tool for teacher preparation. *Journal of Technology and Teacher Education*, 16(2), 137-153.
- Hull, G., & M. E. Nelson. (2005). Locating the semiotic power of multimodality. *Written Communication*, 22(2), 224-261.
- Posner, G. J. (2005). *Field experiences: A guide to reflective teaching*. (6th ed.). NY: Allyn and Bacon.
- Schon, D. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.
- Smagorinsky, P., & Whiting, M. (1995). *How English teachers get taught*. Urbana, IL: National Council of Teachers of English Press.
- Strauss, S. (1993). Teachers’ pedagogical content knowledge about children’s minds and learning: Implications for teacher education. *Educational Psychologist*, 28(3), 279-290.
- Wilson, S., Shulman, L. S., & Richert, A. E. (1987). 150 different ways of knowing: Representations of knowledge in teaching. In Calderhead, J. (Ed.), *Exploring Teachers’ Thinking*. (pp. 104-124). London: Cassell.
- Yerrick, R., Ross, D., & Molebash, P. (2005). Too close for comfort: real-time science teaching reflections using digital video. *Journal of Science Education*, 16(4), 351-375.

Engaging Student Voices in ePortfolio Development, Assessment, and Research

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Abstract: Often, traditional course activities are instructor-created and student-completed. ePortfolio activities offer a unique opportunity to incorporate student voices into classroom procedures. When students are able to decide what artifacts go into their ePortfolio and their personal reflections are guided by well-informed instructors, the ePortfolio becomes a powerful device for assessing the learning happening within a course or program, both for the student and the faculty. This session reviews an example of a program that has incorporated ePortfolio thinking into its pedagogy, the Engineering Education Ph.D. program at Virginia Tech. Guided by a participant-designed theory, the faculty involved the students in all levels of designing the ePortfolios that would be used to assess their own performance in the program. This enables the students a greater ability to consider their own performance against student-centered learning outcomes and to be invested in the construction of the ePortfolios that will be used to assess them. At the same time, the program gathers a unique form of assessment data: student voices in attaining professional standards of practice, bolstered by evidence drawn from their academic activity. This assessment data can be used to continually improve the program with each new cohort of students and their input into the process; it can also be used to demonstrate the achievements and outcomes of this newly-formed department.

Overview of ePortfolio Pedagogy and Assessment Strategies

After decades of use in higher education, there is a broad range of research indicating the effectiveness of ePortfolios. Schneider (2009), the president of the American Association of Colleges and Universities, argues: “What we need now is a proactive movement—involving committed leaders, faculty members, and assessment scholars—to chart an educationally productive direction for assessment, transparency, and accountability.” Indeed, ePortfolios are beginning to gain national attention in the debate about accountability.

ePortfolios for assessment often operate at the program level to capture “direct evidence” of student learning. At the basic level of an ePortfolio, students demonstrate how effectively they have learned material, and programs can assess how effectively they are teaching (Knight & Gallaro, 1994). Students often complete program portfolios to show that they have mastered a prerequisite for a major or to show that they have mastered areas for a degree and are qualified to join a professional community of practice. Johnson et al. (2006) emphasize two qualities that are typically inherent within all portfolios: reflection and facilitation of authentic assessment.

Attaining authentic assessment requires that authentic student voices are encouraged to emerge in the ePortfolio activities, such as when the creator chooses a set of “best” pieces to show a range of performance and skills achieved. This type of portfolio may be guided by a range of required elements, but it is the student’s choice of materials and reflections that make the portfolio an individual expression of learning. Teachers can then use this expression and self-assessment to evaluate the curriculum.

Portfolios are commonly defined as “a purposeful collection of student work that exhibits...student self-reflection” (Northwest, 1991). Reflective acts can include written and multi-media evaluations and presentations of work. This act of narrative has been theorized as an effective mode of deep learning and identity formation (Moon, 2004). Fundamentally, presenting one’s accomplishments is an act of identity construction: by organizing and conceptually framing artifacts, a person presents their perceptions of who they are (Turns, 2009).

Participatory Design

For students, the ePortfolio process requires guidance, which leads to another crucial issue in portfolio construction: the locus of control (Barrett & Wilkerson, 2004). If the portfolio is intended to improve learning processes, it will use more qualitative data for formative assessment, and students will have more freedom in selecting content and constructing their own presentations (Clark, 2008). This participatory student-centered model is more qualitative and

intrinsically motivating. If a participatory, student-centered model is employed, an ePortfolio program will have a better chance at gathering useful assessment data, useful to students for assessing their own learning, and useful for the instructor and faculty to assess on a more systematic scale.

Participatory design approaches a project from a cooperative perspective, focusing on user needs and usability. It applies a systems approach to organizations and views them as conflict-based, as opposed to consensus-based (Bødker, Kensing, & Simonsen, 2004). Similar to participatory design, participatory action research is reflective, collaborative, problem-finding, client-centered, and action-centered.

Using a participatory design approach, students and faculty in the Engineering Education graduate program conducted two projects as part of an Assessment course: students designed ePortfolios to assess their own graduate program, and they designed ePortfolios to assess a large Engineering graduate program.

Students followed a systems model for their action research process according to the description in *Management, systems, and society: An introduction* (Johnson, 1976). Through this sort of problem-based learning and participatory action research, students gained valuable insights. They applied theory in a real-world context; they navigated different “cultures” of assessment; they dealt with low user motivation; they gained valuable career preparation; and they gained an increased awareness of challenges of performing authentic assessment. By dealing with real-world roadblocks to sound assessment and learning development practices, students gained valuable experience.

Conclusion

Bringing together the three aspects of ePortfolio development for one individual student – professional identity, self-reflection, and continual assessment – allows classroom instructors a unique opportunity to engage in research on teaching and learning. When ePortfolio programs are developed using a participatory design strategy – when students, instructors, and administrators all have a stake in the design and implementation of the ePortfolios – the greater the likelihood of the ePortfolio activities being successful in attaining those outcomes.

References

- Barrett, H. C., & Wilkerson, J. (2004). *Conflicting paradigms in electronic portfolio approaches*. Paper presented at the American Educational Research Association (AERA), Montreal, Canada.
- Bødker, K., Kensing, F., & Simonsen, J. (2004). *Participatory IT design: Designing for business and workplace realities*. Cambridge, MA: MIT Press.
- Clark, S.F., & Bailey, J. (2008). Developing an E-Portfolio System through Student-Faculty Collaboration. *Dietetics Educators of Practitioners*, 15.
- Johnson, R.A. (1976). *Management systems and society: An introduction*. Pacific Palisades, CA: Goodyear Publishing Company.
- Johnson, R. S., Mims-Cox, J. S., & Doyle-Nichols, A. (2006). *Developing portfolios in education: A guide to reflection, inquiry, and assessment*. Thousand Oaks, CA: SAGE Publications.
- Knight, M. E., & Gallaro, D. (Eds.). (1994). *Portfolio assessment: Applications of portfolio analysis*. Lanham, MD: University Press of America.
- Mead, G. J. (1934). *Mind, self and society*. Chicago: University of Chicago Press.
- Moon, J. (2004). *A handbook of reflective and experiential learning: Theory and practice*. London: Routledge Falmer.
- Northwest, E. A. (1991). Portfolios. *Portfolio News*, 2(3), 4.
- Schneider, C. G. (2009). The proof is in the portfolio. *Liberal Education*, 95(1), 1-2.
- Turns, J. (2009). Using electronic portfolios for engineering identity formation. In L. McNair (Ed.). Austin, TX.

Enriching the Online Teaching Experience: Meaningful Faculty Development

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Abstract: Faculty development and support are necessary in order to sustain an effective distance education program. Virginia Tech's Institute for Distance and Distributed Learning has developed a two-tier faculty development model that addresses professional development needs for beginning online faculty and the needs of more seasoned faculty. This practice session will provide an overview of the model that is used, present how two faculty members have applied the model within their online classes, discuss how the program has been assessed, and allow attendees to discuss how they might engage in effective online course development.

Recent statistics reveal that delivering course content to students is of continuing interest to university faculty. Over one-third of public university faculty have taught an online class while more than one-half have encouraged students to enroll in an online course (Association of Public and Land-grant Universities-Sloan National Commission on Online Learning, 2009). At the same time, impediments to online course delivery have been readily identified by faculty, including acknowledgement that teaching an online course can take more effort than delivering content through traditional face to face venues. In addition, support opportunities that would assist faculty in delivering courses online provided by higher education often fall short of faculty expectations.

In addition to faculty engagement and training, considering the pedagogy that is used in online course delivery is also important. Research indicates that if online course design and delivery is grounded in learner centered theory then students can effectively engage with and master course content. Online pedagogy requires thinking about how to facilitate interactions between students as well as getting students to engage with the course content through electronic mediums. Learning experiences that are designed to promote purposeful collaboration between students and those that utilize multiple methods to deliver content as well as assess the transfer of knowledge are more likely to see increased gains in student learning. However, faculty who lack adequate training in online course development and appropriate pedagogy can negatively impact student learning.

When designing professional development for online teaching faculty, it is important understand the varying degrees of online teaching experience that distance instructors may have. To address the specific needs of new online teaching faculty and more seasoned faculty, the Institute for Distance and Distributed Learning (IDDL) at Virginia Tech has developed a two-tier faculty development model that culminates with online instructor certification.

In IDDL's model, Tier 1 instructors are typically new to the online environment and receive tool-based professional development. These instructors attend seven workshops meant to orient participants to distance education. Topics include creating online presentations (PowerPoint as well as tutorials); using online meeting spaces for office hours, group meetings, and lectures; creating accessible multimedia; and online interaction strategies.

Teaching faculty who have developed basic online teaching skills through previous online teaching experience, or Tier 2 instructors, are encouraged to improve the structure and value of their online classes by attending. Attending six workshops, Tier 2 participants examine strategies, pedagogy, and best practice information. Topics include writing clear objectives, effective communication, online assessment, and quality assurance. The series of workshops culminates with a hands-on session in which instructors demonstrate how workshop content will be implemented in their online courses.

Collectively, the certificate program hopes to create a cadre of faculty who are prepared to teach in an online learning environment and can effectively address the learning needs of an online student population.

This session illustrated the faculty development practices offered by IDDL and focused on pedagogy used to enhance the online learning experience. Representatives from IDDL provided an overview of the aims and goals of the online instructor certificate program. Two faculty members who have received the online instructor certification

shared their experiences in applying the concepts covered during training, including what they found useful as well as the challenges inherent in delivering course content online. Session participants asked about the technology needed to utilize some of the methods to deliver content featured during the session. Discussion focused on how faculty members approached the development of their courses, mentioning the inclusion of explicit course objectives and how they tried to engage students through an electronic medium. Faculty presenters highlighted the need to encourage student interaction and discussed where they saw benefits with regard to student engagement with the course content given the online course delivery. In terms of motivations for teaching online, faculty members mentioned that online course delivery gave them a new way to think about the Scholarship of Teaching and Learning.

In addition this session reported findings from a preliminary study that looked at the impact of IDDL's faculty development initiatives by examining differences in students' perceptions of learning between students enrolled in courses taught by IDDL certificate earners and those enrolled in courses taught by non-certificate earners. While overall results from this limited study shows promising results in terms of student engagement and learner satisfaction in courses where the instructor received a certificate, ways in which this information will be used to shape and improve upon the certificate offerings in the future were also discussed.

Equity Pedagogy: A Transition from Multi-cultural to Cross-cultural

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Abstract: As Counselor Educators move towards 21st-century learning, it is imperative that we provide equitable learning opportunities for all students. The delivery of such extends beyond teaching a multicultural counseling course. Counseling Education curriculum should move towards a cross-cultural pedagogical approach. This work addresses the significance of this transformation to equity pedagogy.

Education is the great equalizer and bridge by which many learners overcome the opportunity gaps that often preserve social inequalities in modern global society. Unfortunately, the provision of quality education is not guaranteed for all students. Furthermore, issues of diversity continue to directly correlate with student achievement (Banks 1994, Gorski 1999, Ladson-Billings, 1994). As with primary and secondary school systems, institutions of higher learning are susceptible to maintaining the dominant societal and cultural practices that reinforce these opportunity gaps, and thus maintain the status quo.

In response to the U.S. Civil Rights Movement of the 1960s and 1970s, educational strategies to help foster successful learning outcomes for *all* students were developed. As a result, *multi-cultural education* grew out of the demands of ethnic minority groups for inclusion in school and university curricula. The creation of equitable educational opportunities for all students, regardless of race, culture, and ethnicity, continues to be the goal of multicultural education. The concepts found within multi-cultural education have been deliberately implemented within primary and secondary school settings throughout the United States and abroad.

Dr. James A. Banks (1993, 1994) identified five Dimensions of Multicultural Education that serve to assist educators in the implementation and assessment of programs that respond to student diversity. Of these five dimensions: content integration, knowledge construction, prejudice reduction, equity pedagogy, and empowering school culture and social structure (Banks, 1994); we believe *equity pedagogy* has great potential for implementation within the field of teaching and learning in higher education.

Often mistaken as equality, the concept of equity pedagogy speaks to the development of curriculum and teaching strategies that help to ensure equitable learning opportunities for all students. While equality often lends itself to equal treatment, equity provides equal opportunities for successful outcomes.

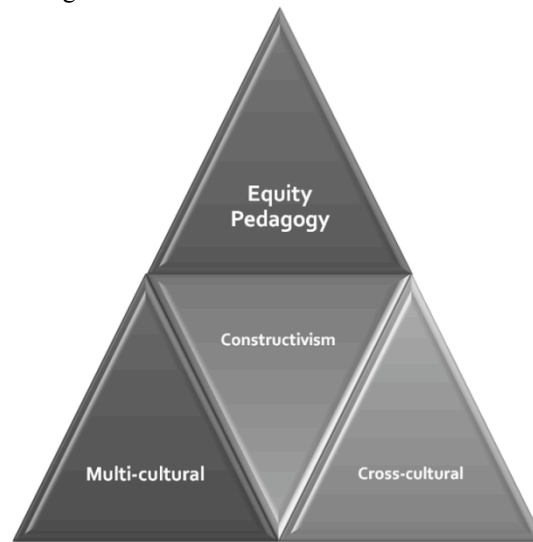
For instance, equality might be evident through an instructors' policy for late assignments. Equity, on the other hand, could be present in the treatment and expectation regarding verbal class participation of students who are not fluent speakers of Standardized American English. Equity, in terms of pedagogy, requires educators to provide culturally relevant instruction, re-examine power differentials within the educator-student relationship, and assess the hidden curriculum within the classroom (Bennett, 2003). Research has shown that the hidden curriculum, i.e. teachers' attitudes and beliefs about student potential, has a tremendous impact on student learning outcomes (Apple, 1990).

Multi-cultural can be defined as that which is representative of, or pertaining to, multiple cultural perspectives. Several themes can be identified throughout multi-cultural literature. These themes include the promotion of social justice, the preservation of human dignity, advocacy of democratic values, and the affirmation of cultural pluralism.

Cross-cultural can be defined as respecting and understanding techniques and strategies of other cultural identities. Further being cultural competent includes a self-awareness of one's own biases and assumptions and biases in the approaches that are used (Frew & Spiegler, 2008).

The authors of this paper believe constructivist pedagogical methods are an ideal means for transitioning to a cross-cultural perspective, which ultimately will lead to equity pedagogy (see Figure 1). Constructivist beliefs are centered in the idea that learning occurs only when the learner is individually and socially engaged in activities that foster discovery, further promoting the deliberate inclusion of equity pedagogy in higher education.

Figure 1. Model of Transformation



References

- Apple, M. (1990). *Ideology and curriculum* (2nd ed), New York: Routledge.
- Banks, J. (1994). Transforming the mainstream curriculum. *Educational Leadership*, 51(8), 4-5.
- Bennet, C. (2003). *Comprehensive multicultural education: Theory and practice*. Boston: Pearson Education, Inc.
- Frew, J., & Spiegler, M. D. (Eds.). (2008). *Contemporary psychotherapies for a diverse world*. Boston: Lahaska/Houghton Mifflin.
- Gorski, P. (1999). A brief history of multicultural education. EdChange Multicultural Pavilion. Retrieved from http://www.edchange.org/multicultural/papers/edchange_history.html
- Ladson-Billings, G. (1994). What we can learn from multicultural research. *Educational Leadership*, 51, 22-26.

From The Actor's Toolbox: Powerful Oral Communication, One Step at a Time

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Abstract: Public speaking is a recurring event for academics, though not a skill most have explicitly developed. We lecture, direct group work, lead discussions, deliver conference papers, conduct meetings, and represent our university to the community. Instructors want to be effective speakers in all these settings, especially when communicating the complex ideas of our disciplines. Precise, confident speaking has a positive impact on learning, making ideas easier to hear, understand and recall. In addition to teaching content, faculty are also models for students who are developing their own professional personas, beginning to find their voices as chemical engineers, philosophers, economists. Sometimes we fall victim to the fallacy that accomplished speakers are born, rather than made. We conclude that there is nothing to be done, that we will always suffer anxiety and a feeling of ineptitude when faced with challenging speaking situations, such as teaching large-enrollment courses. This workshop contests that notion, and offers ideas and exercises on discreet elements of speech. Following the session participants will be equipped to work on particular elements they select, which will result in improved speaking ability and confidence. Such improvement can be accomplished in a matter of weeks through brief (10 minutes) daily practice. Methods for efficient and effective practice will be discussed.

What we did during the session

We discussed possible reasons for speaking anxiety, why it ranks as the #1 fear in many surveys. A demonstration of two modes of presenting (speaker-centered or audience-centered) led to a conclusion about reducing anxiety by planning to focus on listeners, to consciously include the audience, via brief interactive segments or by close attention to nonverbal signals listeners give.

We then did exercises on five discrete elements important to public speaking – breathing, eye contact, rate, volume and eliminating vocal clutter. Many of the exercises are adaptations of vocal and physical exercises used by actors. Participants were encouraged to be self-aware, self-diagnostic throughout the session in order to emerge with strategies to improve specific elements of speech. We noted that a few minutes of daily practice of these exercises will lead to mastery of these components of speech.

What was accomplished

Judging by the group's obvious, energetic and happy participation in exercises and discussion, I think my goals for the session were, in the main, accomplished. Those goals were as follows:

- Rather than simply better understanding concepts related to speech, attendees will *emerge* with a practical, customized plan for improvement.
- Participants will *know* the individual elements that combine to form one's speaking persona.
- They will *learn* the utility of targeted practice, of working on these elements one at a time.
- They will *be able to* improve their own public speaking capabilities and to coach others to more effective and confident oral presentation.

Informing Online Course Design

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Abstract: Recent collaborative efforts between faculty and the Virginia Tech Institute for Distance and Distributed Learning (IDDL) that involve transforming a course designed to improve problem-based learning will provide a medium through which IDDL course design practices are illustrated to session participants.

Introduction and Background

The Institute for Distance and Distributed Learning (IDDL) at Virginia Tech works with faculty members to transform courses offered previously in traditional formats into online learning experiences. This session showcased the process used for these transformation efforts which involves collecting baseline data about students' learning behaviors, student achievement, and instructional pedagogy in traditional learning environments and then applying this information to online course design. These same indicators are then monitored in the online course format to examine the impact of course delivery. In carrying out this process, IDDL hopes to create environments that facilitate students' learning and allow for reflection on behalf of the faculty member delivering the course. Recent collaborative efforts that involve transforming a course designed to improve problem-based learning in the Mechanical Engineering Department provided the medium through which these practices were illustrated to session participants.

Problem Statement

One of the appeals of asynchronous technologies is that learners can access materials, complete assignments, participate in discussions, and take exams according to schedules that they determine themselves. Hypermedia learning environments offer particular advantages to learners who are inherently self-directed learners. However, at many institutions the current population taking online courses consists of traditional undergraduates. These students typically require and expect more structure and instruction. Many students, particularly those with low motivation and achievement, are unwilling to do mindful work, such as executing higher-level cognitive processes that are involved in problem solving.

Course design can be used to enhance collaboration and feedback through active engagement with materials and collaboration with peers and instructors (Swan, 2005). Online resources such as the chat, discussion forum, blog, and wiki can play an active role in facilitating teamwork and feedback.

Social constructivism provided the basis for the IDDL course transformation effort and related instructional strategies. Social constructivism suggests that the exchange of critical feedback among peers as well as from the instructor can encourage students to modify their work. Learners engaged in a collaborative problem solving process receive feedback and comments from peers, and from the teacher on the steps of planning, implementing, and executing problem solving processes rather than only receiving feedback from the instructor on their performance. Feedback is an important consideration because it requires transfer of knowledge and therefore represents students' gain in problem solving. In particular, feedback from peers may push students to perform higher level cognitive functions. Furthermore, social cognitive theory posits reciprocal interactions between behaviors, cognitions, and environmental variables can enhance self-efficacy as it relates to problem solving skills. Feedback from both peers and instructor are environmental variables as well as the mode of course delivery that can influence student confidence as it relates to the acquisition of problem solving skills.

Course Design and the Presentation

The course transformation model utilized by IDDL is designed to take these factors into account. One primary goal of the model featured during this practice session was to explain how the various factors within a learning environment that influence problem solving skills were examined and then used to inform online course design including: a) the exchange of critical feedback occurring among peers, b) how the instructor attempted to influence problem solving skills through pedagogical approaches, and c) students' perceptions of their self-efficacy as it

relates to problem solving changed over a course of a semester. To that end, this session shared data collected from an in-class teaching of a thermodynamics course. Data included survey responses as well as focus group interviews. The faculty member associated with the course, Dr. Simin Hall, and IDDL staff, Drs. Deyu Hu and Catherine Amelink, explained how the results were used to inform the design and creation of an online version of the class; specifically, presenters discussed how they created a problem based learning format and the interactive technology that was used to create a dynamic learning environment and meaningful interaction and collaboration among students and with the teacher. Follow-up plans to assess the problem based design and delivery of instruction through the online course and whether it improves students' problem solving skills in comparison with conventionally in-class taught students were also discussed.

By sharing with others how cognitive theory and student learning literature can be applied in transferring courses from traditional to an online, asynchronous format faculty members had an opportunity to consider how to transform other courses. Session participants raised a number of questions about the workload involved in designing and administering an online course. Dr. Hall shared her personal experiences with regard to balancing the workload as well as explaining in what ways IDDL provided assistance. Discussion also focused on best practices in online delivery as it relates to student engagement. Academic integrity as it pertains to student work and submission of assessments within an online environment was also discussed.

In doing so, this session enhanced the scholarship of teaching by showcasing what is known about computer-assisted instruction, distance education, and web-based learning applications and the impact of these on student learning among a select student population at Virginia Tech. The scholarship of teaching and learning was also enhanced as discussion focused on how these recent efforts might serve as a model that could be applied to other courses that target a particular skill set among students.

Lab-in-a-Box: Demonstration of Independent Experimentation on Concepts from Circuits

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Abstract: The EE and CpE curricula at Virginia Tech are very mathematically oriented and have been found to be aligned more to analytical thinking with little experimental coursework, which made learning the material difficult for those who are visual learners. An additional factor that was handicapping our visual learners was that a number of informal learning opportunities had vanished. Fewer of our incoming sophomores had experience in any aspect of electrical engineering that was common in past decades. While our students made extensive daily use of complex electronic devices, they had no experience in electronics from an experimental point of view as interest in ham radio has waned, sales of home electronic kits are negligible, and the motivation to disassemble and reassemble computers has been reduced. Lack of prior experience appeared to increase the difficulty that students have with the abstract concepts presented in the two introductory circuits courses, as evidenced by an increase in the students' frustration level and a sense by the instructors that they have had to reduce the course content to achieve a reasonable depth of learning overall or abandon a large percentage of the students. Thus, we determined that we needed to revise the EE and the CpE curricula, especially in the early years, include a significant active "hands-on" learning component. To address this need for concrete examples of fundamental concepts in electrical engineering, a project known as Lab-in-a-Box (LiaB) was developed in 2004 with funding from a grant from the National Science Foundation. LiaB is a set of 'hands-on' exercises in which students design, build, and test at home various dc and ac circuits using an inexpensive electronics kit, digital multimeter, and oscilloscope and, thus, has not required significant resources to implement. The inclusion of LiaB in our ECE curriculum has received positive comments from the students as well as from faculty members who have used the kits for projects in upper division courses that have been traditionally lecture-based and has been adopted by three community colleges. Students construct circuits with physical components rather than symbolic parts in a circuit simulation software package such as PSpice and determine the time-varying voltage drops and currents in the circuit by direct measurement rather than by plugging values into their calculators. Experiments enable students to explore how the component tolerances, the initial state of the capacitor and/or inductor, and the frequency response of the circuit affects the output signal. A brief description of our pedagogical approach to the development of these learning materials and the integration of evaluation and assessment metrics will be provided. The participants will then be asked to listen to a short lesson on voltage division, one of the early topics in the lecture course. After this lesson, the participants will conduct the hands-on experiment that is used to re-enforce the abstract theory. Evaluation of the instructional approach will be solicited from the participants.

Mentoring Early Career Faculty through Learning Communities

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Mark Barrow

Heather Gumbert

Matthew Heaton

Dennis Hidalgo

Emily Satterwhite

Helen Schneider

Marcy Schnitzer

Regan Shelton

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Abstract: While everyone recognizes that successful teaching is quite difficult, graduate programs in the social sciences and the humanities rarely require their students to take formal pedagogy classes. Most doctoral students gain limited teaching experience as GTAs, but their responsibilities are usually restricted to leading discussion and grading. As a result, they are unable to acquire the full range of skills a teacher needs to achieve success in the classroom. Some doctoral students gain the opportunity to independently teach classes before they graduate, but too often they do so with little guidance or oversight (Austin, 2002; Gaff and Lambert 1996). In short, we tend to throw our new teachers into the deep end of the pool. Some sink, some figure out how to tread water, and some eventually learn how to swim. To begin addressing the relative lack of formal training in how to teach in the university setting, we have created a learning community consisting of several early-career faculty and a small number of more experienced teachers (not unlike the experiment discussed in Cox, 2004). For the past four and one half years, we have met bi-weekly to explore together how effective teaching and learning takes place, to provide a safe place to gain useful feedback about what's going on in our classrooms, and to offer emotional and intellectual support for all of its participants. Our learning community not only promotes the acquisition of useful teaching skills but also a sense of connection. Numerous studies have shown that one of the best predictors of whether a newly hired faculty member thrives at a new university (and wants to remain there) is the sense of community fostered within that institution (Rice, Sorcinelli, and Austin, 2000; Boice, 1993). Our group forges a sense of community around the issue of quality teaching, active learning, and student engagement. It provides a venue for participants to come together with like-minded colleagues who are equally committed to the teaching and learning enterprise, but to do so in an informal, supportive environment in which no one feels that she or he is being judged or evaluated. We believe our experiment has not only been a success but also that it is worthy of emulation.

References

- Austin, A. E. (2002). Preparing the next generation of faculty: Graduate school as socialization to the academic career. *Journal of Higher Education*, 73(1), 94-122.
- Boice, R. (1993). *Supporting and fostering professional development*. San Francisco: Jossey-Bass.
- Cox, M. D. (2004, Spring). Introduction to faculty learning communities, *New Directions for Teaching and Learning*, 97, 5-23.
- Gaff, J. G., & Lambert, L. M. (1996). Socializing future faculty to the values of undergraduate education, *Change*, 28(4), 38-45.
- Rice, R. E., Sorcinelli, M. D., & Austin A. E. (2000). *Heeding new voices: Academic careers for a new generation*. New Pathways: Faculty Careers and Employment for the 21st Century Series, Working Paper Inquiry no. 7. Washington, D.C.: American Association for Higher Education.

More than Meets the *i*: Maintaining a Sense of Classroom Community in Today's Tech-Savvy World

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Abstract: In the past decade, the emergence of technologies and technology-driven curricula has radically transformed what was once considered the “traditional” classroom—one characterized by blackboards, chalk and taking notes by hand—into a learning environment dominated by netbooks, blogging, iPods and cellular devices. While this transformation has largely been embraced, a certain negative stigma regarding the use of such devices remains. In this session, participants will be introduced to a variety of educational and non-educational technologies and will have the opportunity to discuss these technologies in light of current pedagogical practices in higher education. Particular emphasis will be placed on ways in which such tools can be integrated effectively into one’s own curriculum to engage students and to maintain a sense of classroom community.

Goals and Objectives

This session is designed to:

- Describe technology-based approaches for engaging students in discipline-specific and interdisciplinary content
- Better determine which tools and resources would be valuable for use in their own classroom (through discussion with their peers) and why
- Apply best practices when integrating such technology effectively into their own classroom, such that technology will serve to enhance one’s learning environment and encourage a sense of classroom cohesiveness and cooperation

Audience

Given the global pervasiveness and applicability of technologies in educational environments, it is anticipated that this session will be of significance to those participants interested in more effectively integrating technology into their own classrooms (particularly in an effort to engage students and encourage collaboration), regardless of academic discipline. Participants will also be asked to utilize technology during the session as a means by which to exemplify what is being discussed. This will again be of particular interest to those individuals desiring to learn how pre-existing tools can be implemented in innovative ways in their own courses.

Discussion

For more than 50 years, the impact of technologies on learning and knowledge acquisition has been examined and reviewed (West, 1999). As a result of the introduction of the internet and worldwide web in the mid-1990s, blogging, discussion boards, wiki pages, and even social networking sites such as Facebook and Twitter have been embraced as media through which educational content can be delivered and assessed (as examples, Williams and Jacobs, 2004; Mazer *et al.*, 2007). These tools have been paramount in shaping novel educational environments, particularly asynchronous online, hybrid, or distance-based programs (Brown, 2001). Though such programs often offer a high degree of flexibility and student-driven pursuit of knowledge, they also, by their very nature, typically exclude face-to-face interaction between students or between students and faculty. The negative impact of such exclusion on achieving a sense of classroom cohesiveness and community is well documented in the literature (see, as examples, Wallace, 2003; Rovai & Lucking, 2003). In recent years, the general pervasiveness of handheld devices and notebook computers has generated a similar trend in on-campus courses, though to a lesser degree than the aforementioned learning environments. While this is the case, successful adaptation of these devices for use in the classroom has yielded not only positive, beneficial learning gains, but also a level of community nearly equivalent to direct face-to-face contact (Lord & Lomicka, 2008). For this reason, it is perhaps imperative that we, as educators, continue to consider and evaluate the role of technologies in developing meaningful and engaging learning environments in an effort to promote best practices and enhance student comprehension of key phenomena in our respective domains.

References

- Brown, R. (2001). The process of community-building in distance learning classes. *Journal for Asynchronous Learning Networks*, 5(2), 18-35.
- Lord, G., and L. Lomicka. (2008). Blended learning in teacher education: An investigation of classroom community across media. *Contemporary Issues in Technology and Teacher Education*, 8(2), 158-174.
- Mazer, J., Murphy, R., and C. Simonds. (2007). I'll see you on "Facebook": The effects of computer-mediated teacher self-disclosure on student motivation, affective learning and classroom climate. *Communication Education*, 56(1), 1-17.
- Rovai, A., and R. Lucking. (2003). Sense of community in a higher education television-based distance education program. *Educational Technology Research and Development*, 51(2), 5-16.
- Wallace, R. (2003). Online learning in higher education: A review of research on interactions among teachers and students. *Education Communication and Information*, 3(2), 241-280.
- West, G. (1999). Teaching and technology in higher education: Changes and challenges. *Adult Learning*, 10(4), 16-18.
- Williams, J., & Jacobs, J. (2004). Exploring the use of blogs as learning spaces in the higher education sector. *Australasian Journal of Educational Technology*, 20(2), 232-247.

Overcoming Aliteracy

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Abstract: This session is a hands-on demonstration of strategies that demonstrably enable teachers to help students overcome aliteracy and are adaptable to any discipline. We discuss how and why to write free-response adjunct questions for use in a small class and dual-choice questions for on-line use by a larger class. We address participant assessment of student-authored questions and discussion of what these tell us about how students read. An examination of data from Blackboard reveals when students read.

Students without a reading habit encounter difficulties and lose their motivation when confronted with college-level texts. These hurdles are exacerbated by the fact that students must learn how to read a variety of texts, from Plato to Shakespeare's plays to the latest textbook on evolutionary biology.

As anyone who spends time in department hallways knows, instructors often interpret these reading problems as indicating either students' lack of a work ethic or their need for remedial education before enrolling in the instructors' courses. In either case, the response from instructors is often that giving students assistance in reading "is not what I'm paid to do" (in the words of at least one friend and colleague).

One unintended result of this response is that the instructor's course assignments, including exams, become tests of students' reading comprehension skills in the discipline's *discourse* before they are tests of students' familiarity with the discipline's *content*. Thus, although instructors disclaim responsibility for teaching reading skills, they do end up assigning grades based on those skills. In other words, content-area instructors (in history, science, and so on) might not teach reading, but they do test it.

Instructors might be surprised to learn how easily a text becomes frustrating for any given reader. Take, for example, the ability to simply decode the individual words in a text. A reader who is decoding at a rate even as high as 90% is at his or her frustration level. Independent reading is not reached until the decoding rate is 99%. In between is the decode rate, approximately 95%, for instructional level reading. The instructional level is where reading can be successful *with the assistance of the instructor* (Manzo, Manzo, & Thomas 2009).

That assistance can be rendered as *scaffolding* designed to improve the quantity and quality of students' reading habits. The scaffolding can be in the form of adjunct questions strategically constructed so that, in writing out the answers, students create their own complete set of reading notes for a given article or chapter. Adjunct questions so constructed help students not only to *complete* the reading but also to learn *how* to read in a particular discipline (Schellings & Van Hout-Wolters 1995). For example, a particular student might have little trouble tracking themes in a novel but require guidance to follow the expository prose of social scientists. The scaffolding strategy thus takes into account the fact that literacy is not a one-size-fits-all skill that can be deployed with equal effectiveness in any discipline however unfamiliar to the reader (Deegan 1995).

While the task of writing notes by answering adjunct questions seems quite straightforward, college students tend to be overconfident about their success in answering adjunct questions (Pressley et al. 1990). For example, many will grasp that the answer to a question is in a paragraph but not see exactly where. Frequently, their solution is to write out the entire paragraph, including extraneous material—an extension of "the knowledge-telling strategy (telling everything one knows about a given topic)" of grade-school students (Hidi & Klaiman 1983). Having the opportunity, in group discussion, to compare that kind of note taking with a peer's—or a teacher's—more concise paraphrase serves both the content goals of the course and the literacy needs of the students. The corrections and other improvements students make are tangible evidence of the need for, and value of, this kind of scaffolding.

In a large lecture course without small group follow-through, it is difficult to address quality of reading very effectively. However, *quantity* of reading can be improved by supporting self-monitoring, which has been shown to be effective for a variety of behavioral improvements ranging from adults' health management to children's classroom behavior (Boutelle & Kirschenbaum 1998; Daly & Ranalli 2003). In a recent course on biography too large for small group work, self-monitoring was encouraged via simple on-line alternative-choice quizzes designed

less to test students than to let them record their own reading progress. Seventy-seven per cent of the students completed ninety percent or more of the 765 questions on 101 on-line chapter quizzes covering two textbooks and five biographies.

References

- Boutelle, K. N., & Kirschenbaum, D. S. (1998). Further support for consistent self-monitoring as a vital component of successful weight control. *Obesity Research, 6*, 219-224.
- Daly, P. M., & Ranalli, P. (2003). Using countoons to teach self-monitoring skills. *Teaching Exceptional Children, 35*(5), 30-35.
- Deegan, D. (1995). Exploring individual differences among novices reading in a specific domain: The case of law. *Reading Research Quarterly, 30*(2), 157.
- Hidi, S., & Klaiman, R. (1983). Notetaking by experts and novices: An attempt to identify teachable Sstrategies. *Curriculum Inquiry, 13*(4), 393.
- Manzo, U.C., Manzo A.V., & Thomas, M.M. (2009). Content area literacy: A framework for reading-based instruction. Hoboken: John Wiley & Sons.
- Pressley, M., Ghatala, E., Woloshyn, V., & Pirie, J. (1990). Sometimes adults miss the main ideas and do not realize it: Confidence in responses to short-answer and multiple-choice comprehension questions. *Reading Research Quarterly, 25*(3), 232-249.
- Schellings, G., & Van Hout-Wolters, B. (1995). Main points in an instructional text, as identified by students and by their teachers. *Reading Research Quarterly, 30*(4), 742-756.

Raising the Bar: Making Meaning of Classroom-Level Assessment for Programmatic Improvement of Teaching & Learning

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Abstract: Unsure how to initiate new assessment efforts in your program or college? Does your department feel way-too-small or overwhelming large to tackle assessment effectively and efficiently? Are you wondering how your liberal arts, sciences, or pre-professional peers assess core competencies like critical thinking? Interested in identifying interdisciplinary partners for an assessment project? Such questions – and arguably countless others – perplex professors as they are directed to engage in meaningful assessment of student learning to meet the myriad demands of higher education’s constituencies. This interactive session will help faculty “raise the bar” of assessment on their home campuses through the development of strategies for expanding upon classroom-level evaluation of teaching and learning to achieve programmatic-level improvements. We will explore the results of one study into departmental use of assessment data and mini-case studies as well as the collective expertise of the session’s participants to build upon our teaching and learning expertise in order to identify and articulate effective ways to shift our “unit of analysis” from the individual classroom to the program/department when considering student work products as evidence of teaching and learning. It is the hope and expectation that participants will develop a preliminary “toolkit” of strategies for program-level student learning outcomes assessment to take home to their individual campuses, as well as a network of teaching and learning colleagues interested in and motivated to make programmatic assessment a meaningful component of teaching and learning.

Student Peer Evaluation for Improved Learning and Performance

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Abstract: Higher education has experienced an increase in the use of small group activities in recent years (Friedman, Cox, & Maher, 2008). However, if you ask students, many of them will share their dislike of group activities. Often, they are frustrated by the distribution of work within a group, and they complain about social loafing, or free riding, that occurs when all group members receive the same grade, regardless of input (Aggarwal & O'Brien, 2008; Brooks & Ammons, 2003). This is a frustration for the student who is completing a majority of the work and for the instructor who is trying to engage all students and reward them appropriately. Peer evaluation is an under-utilized technique that can improve student motivation and offer valid assessment, but it must be facilitated appropriately (Baker, 2008). This work highlights the potential of expectancy theory for guiding the peer evaluation process (Friedman et al., 2008).

Expectancy theory can guide the peer evaluation process by promoting incorporation of three key components: expectancy, instrumentality, and valence (Friedman et al., 2008) (Figure 1.). Students must believe that individual effort will lead to acceptable performance (expectancy), performance will lead to specific outcomes (instrumentality), and the outcomes will be personally valued (valence).



Figure 1. Expectancy theory diagram, based on work by Victor Vroom. Reprinted from Arrod Coaching, *Expectancy Theory of Motivation*. Copyright 2003-2006 by Dave Droar. Available at http://www.arrod.co.uk/archive/concept_vroom.php

To incorporate the critical components of expectancy theory into an appropriate peer evaluation process, it is important to address each one separately.

1. **Valence:** Engage students in discussion about the purpose and potential outcomes of a quality peer evaluation process. A quality peer evaluation process will require additional time investment from students, so they need to see a connection to personal benefit. Specifically, the process needs to be framed as an opportunity for improved group dynamics and personal growth.
2. **Instrumentality:** Use an interim peer evaluation mid-way through the semester or project to serve as a check-point. Because this “practice” evaluation is formative, it can promote changes in performance that may be necessary to achieve desired outcomes. As a result, students see that the peer evaluation process has value far beyond a grade in the course.
3. **Expectancy:** Include multiple evaluation formats to best meet diverse learning styles. A single letter or numerical grade is insufficient. Peer evaluation assessments allow students to provide anonymous written comments and ratings, with the understanding that the feedback must be constructive. This allows students to better understand the connections between their effort and the performance ratings from their peers.

To date, the authors have implemented this peer evaluation process with both undergraduate and graduate courses. Feedback from students has been positive, with the majority of students recognizing connections between the peer evaluation process and an improved learning experience. One student volunteered, “the peer evaluation is a way to

try and get everyone to participate and reduce social loafing.” Another student said, “it makes students want to work harder.”

Grade inflation is a concern with peer evaluation, and the best defense against grade inflation is incorporation of objective criteria. The authors have been working with peer evaluation rubrics that offer improved objectivity, but more needs to be done in that area. In some circumstances, the peer evaluation form will need to be tailored to fit the group assignment. As concluded by Friedman and colleagues (2008), peer assessment is a complex process that is in need of further study.

The most significant investment is time and a commitment to the process. You should expect a few hours of work preparing and summarizing the peer assessments. Financial costs associated with peer evaluation may include copies of the assessment forms and/or an electronic course delivery system for managing the distribution, submission, and reporting of the peer evaluations. In most circumstances, the additional direct costs of implementing a quality peer evaluation is less than \$0.50 per student.

References

- Aggarwal, P., & O'Brien, C. L. (2008). Social loafing on group projects: Structural antecedents and effect on student satisfaction. *Journal of Marketing Education, 30*(3), 255-264.
- Baker, D. F. (2008). Peer assessment in small groups: A comparison of methods. *Journal of Management Education, 32*(2), 183-209.
- Brooks, C. M., & Ammons, J. L. (2003). Free riding in group projects and the effects of timing, frequency, and specificity of criteria in peer assessments. *Journal of Education for Business, 78*(5), 268-272.
- Friedman, B. A., Cox, P. L., & Maher, L. E. (2008). An expectancy theory motivation approach to peer assessment. *Journal of Management Education, 32*(5), 580-612.

Supporting GTAs: Building Teaching Confidence and Competence

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Abstract: This session is designed to explore strategies to facilitate graduate teaching assistant (GTA) learning and practice. Without sufficient support and ongoing training, GTAs often feel underprepared and self-conscious regarding their abilities to teach a class themselves or even to support senior faculty in the teaching of a class. Faculty experts may overestimate the skills and capabilities of the novice teacher to effectively map the content of a course, deliver lessons, and plan the management of a classroom. We examine one department's learner-centered approach to preparing graduate students and share strategies that could be applied across disciplines.

Considering Needs of Novice Teachers

Professional training in most fields includes attention to the new professional as a learner, someone who needs to practice the profession and build expertise in discrete steps. Novice teachers in higher education often miss out on such intentional training. Faculty experts may overestimate the skills of the novice teacher to carry out complex teaching tasks, such as mapping the content of a course, delivering lessons, planning assessment, and managing a classroom. Without sufficient support and ongoing training, GTAs often feel self-conscious regarding their abilities to teach a class themselves or even to support senior faculty. This session focused on two GTA training strategies used by one academic department: the use of teaching scripts and intentional learning communities.

Intentional Learning Communities

GTAs actively participate in an intentional learning community designed to provide support and to aid in their decision-making processes. This community helps them to develop as teachers and aids them in building their own strategies for instruction while maintaining consistency among graduate assistants teaching the same course.

Orientation

When GTAs arrive they take part not only in the Graduate School's orientation, but also a week or more of a department orientation. During this time the students get to know the department, the course director, the public speaking curriculum, and their fellow teaching assistants. This initial week of training helps to cultivate a comfortable environment for discussion and questions.

Weekly meetings

The GTA community starts forming in these early stages and continues through weekly meetings. GTAs are also encouraged to share their stories and experiences with one another as frequently as possible. This further cultivates the sense of community and also gives them the opportunity to seek advice regarding troublesome students, ideas for classroom management, activities, and grading/feedback.

Pedagogy course

The GTAs also interact as part of a 3-semester pedagogy course, during which they consider more theoretical approaches to teaching and learning; they also study course design and other topics, such as assessment, learning styles, and needs of specific student populations.

The benefits of a strong community are many, including the strengthening of interpersonal bonds and teaching confidence.

Teaching Scripts

GTAs are prepared to enter the classroom exuding confidence as a competent authority figures. This initial confidence comes from the support provided by a teaching script, which can lead to a true inner confidence as the GTAs becomes secure in their teaching abilities and individual teaching styles. These detailed training scripts provide talking points, pacing, activities, and other unique additions to a traditional lesson plan to allow the graduate student to manage a classroom session in its entirety while alleviating the stress and potential mistakes that may result from a novice teacher attempting a new activity or teaching method. Ultimately, this benefits both the graduate teaching assistant as well as the undergraduates taking their course, as both parties leave the classroom satisfied with the learning experience.

If experienced faculty are able to provide scripts based on their own experience, GTAs can see numerous benefits, including the opportunity to assume the role of an expert, a sense of confidence from working with proven lesson plans, freedom to focus on development of classroom management skills, evaluation tasks, and interactions with students. Experienced GTAs will begin to recognize the reasons that the lessons plans work they way they do – especially if the GTAs have routine discussions and reflection. This deeper understanding will help them continue to build teaching proficiency.

GTA Perspectives

Positive GTA attitudes cultivated by suitable training help to improve not only the teaching assistant's demeanor, but also the academic departments and their program's performance as a whole. Drawing upon principles learned about building a community, GTAs must learn to balance multiple roles upon entering academia. Learning how to deal with these varied roles may affect the GTA's attitudes towards teaching or assisting with a new subject matter, which in turn affects the success of their efforts. It is prudent to keep in mind that many GTAs are grooming themselves for an academic career and attitudes derived from experiences as a teaching assistant may affect their attitudes as a future professor. While simultaneously acting as a student and teacher, the GTA can develop more positive attitudes when mentored by faculty.

Conclusion

The Communication Department has greatly benefited from implementing strategies to prepare GTAs. Graduate students and their undergraduates move through the semesters with few problems. GTAs who have finished their programs at VT often report confidence and competence in their new roles—even once the scripts and other supports are removed. The training program is well worth departmental and faculty commitment.

Selected References

- Athanases, S., Abrams, J., Jack, G., Johnson, V., Kwock, S., McCurd, J., et al. (2008). Curriculum for mentor development: problems and promise in the work of new teacher induction leaders. *Journal of Curriculum Studies*, 40(6), 743-770.
- Mazaka, V. (2009). The niche of graduate teaching assistants (GTAs): Perceptions and reflections. *Teaching in Higher Education*, 14(1), 1-12.
- Milner-Bolotin, M. (2001) Creating community among the graduate teaching assistants: benefits, challenges and lessons learned, *Journal of Graduate Teaching Assistant Development*, 8(2), 65–70.
- Park, C. (2004). The graduate teaching assistant (GTA): lessons from North American experience. *Teaching in Higher Education*, 9(3), 349-361.
- Thornburg, N. A., Wood, F. E., & Davis, W. E. (2000) Keeping established teaching assistant training programs vital: what does it take? *Journal of Graduate Teaching Assistant Development*, 7(1), 77–83.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, UK: Cambridge University Press.
- Wildman, T., Hable, M., Preston, M., & Magliaro, S. (2000). Faculty study groups: Solving good problems through study, reflection, and collaboration. *Innovative Higher Education*, 24(4), 247-63.
- Winternitz, T., & Davis, W. E. (2000) Lessons learned during five years of the UC Davis Program in College Teaching. *Journal of Graduate Teaching Assistant Development*, 7(1), 69–75.

Teaching Controversial Issues Through Guided Group Discussion

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Abstract: Many controversial issues, both social and political, are debated in the world. Much of these topics become infused into various curriculums throughout colleges and universities. Because it is often difficult for instructors to maintain a neutral position when teaching such topics, the question is often asked: Why teach controversial issues, and, if taught, what is the best method for instruction? Often, when providing instruction on controversial issues, the information presented by a teacher conflicts with held beliefs or attitudes of students, thus creating cognitive dissonance. If the instructor is unable to maintain neutrality when teaching, he or she might cause conceptual change in students; however, if this change occurs because of the teacher's bias opinion, is it ethical? Teaching controversial issues through guided group discussion is an approach that holds four main benefits. First, this strategy encourages students to consider both sides of an issue. Second, learning occurs at the top three levels of Bloom's Taxonomy. A third benefit is that instructors are relieved of the struggle of maintaining neutrality when teaching about controversial topics and creates an autonomous learning environment, leading to the fourth advantage. When conceptual change occurs, it is the students who are responsible for their individual conceptual change, not the instructor, removing the question of unethical practices.

The Use of Rubrics to Evaluate Reflective Practice with e-Portfolio

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Abstract: The purpose of this session is to focus on the role of technology in facilitating reflective practice assessment, specifically, the role of the e-Portfolio as a vehicle for assessing student reflective practice. Reflective practice has been established as a critical tool for developing teacher identity in and on their teaching practice. This presentation will focus firstly on reviewing salient literature about reflective practice and its use with preservice teachers. It will then report the findings of a study recently completed by the authors at their state school in Northern America. The purpose of the study was to examine how preservices explore reflective practice, both in written form (blog) and video format (vlog). A secondary outcome of the study was to therefore devise a rubric that could be used across different disciplines to assess students' levels of reflective practice.

The two forms of reflective practice (blog and vlog) utilized by preservice teachers were examined qualitatively using NVivo software for content, emergent themes, and differences between the two modes of reflection from each student over one semester during student teaching. Findings from the analysis suggest that students' ($n = 6$) narratives are markedly different in reflective depth between the two contrasting modalities. Pedagogical reflection is apparent more often in the data of the vlog entries, than the written blog entries where more surface reflection is evident. The content and themes, however, remained consistent within and between student entries. A rubric for assessing levels of reflective practice housed in electronic portfolios was created as a result of this study and was shared and explored with participants during this session. After developing the relevant literature and theoretical supports for the use of e-Portfolio as a vehicle for reflective practice, various key strategies of evaluating such reflective material will be identified and shared using examples from across several disciplines. The delivery method for this session was be firstly "open lecture" with accessibility for questions. The presenters will then share some of their own examples of student reflective practice and also the evaluative rubrics used for the material. Participants were given basic skills in rubric construction. The session focused on interactive activities where reflective prompts were be modeled by the presenters and participants had the opportunity to develop their own rubrics to evaluate reflective material.

With the exception of progressive work in higher education in regard to improving the quality of teaching (such as the work of the International Society for Exploring Teaching and Learning, ISETL), little evidence is found in regard to faculty using self-reflection with students. The majority of research carried out in this area is done so with pre-service teachers who are required to show evidence of their journey from student to teacher. At the higher education level, it is tacitly assumed that all teacher education programs utilize reflective practice. Examining the support for reflective practice in both undergraduate and graduate students, assists in illuminating potential for use with all faculty in an important way: namely, that faculty can incorporate reflective practice for their own students in fields other than teacher education, and utilize e-Portfolio as the vehicle for housing reflective practice across several modalities.

The focus on teacher education is foremost here but connections can be made across different disciplines for the participants. Teaching is "a process of ongoing learning, reflection and decision making" that develops over the course of multiple stages of preservice teachers' education (Barr et al., 2000, p. 464). Beginning with undergraduate studies, preservice teachers develop their knowledge through academic coursework. Subject-specific content knowledge develops through the preservice teachers' content-specific coursework, but pedagogical content knowing (PCKg) does not typically begin to develop until preservice teachers are provided with opportunities to apply subject-specific content knowledge to actual teaching situations (Cochran, DeRuiter & King, 1993; Wilson, Shulman, & Richert, 1987). PCKg is defined by Cochran et al. (1993) as: a teacher's integrated understanding of four components, pedagogy, subject matter content, student characteristics, and the environmental context of learning" (p.266) For the purposes of this work, pedagogical content knowing will include teachers' purposes for teaching content, knowledge of students' content understandings (and potential misunderstandings), knowledge of curriculum and materials, and knowledge of instructional strategies for teaching particular topics within the context of their internship settings. As Grossman (1991) explains, "teachers must draw upon both their knowledge of subject

matter to select appropriate topics and their knowledge of students' prior knowledge and conceptions to formulate appropriate and provocative representations of the content to be learned" (p. 9).

The literature in the field has emphasized the importance of reflective practice in leading preservice teachers to restructure prior understandings and refine pedagogical thinking (Schön, 1987; Calandra, Gurvitch, & Lund, 2008). This is especially critical during the semester in which students complete their student teaching placement, while compiling a culminating electronic portfolio (and accompanying defense/hearing/oral presentation). Fenstermacher (1994) is useful here in terms of understanding what it means to reflect on one's practice in a deliberate manner:

Yet another way to justify that we know something is to offer good reasons for doing or believing it... the reasoning of the teacher takes place in folk or commonsense language... Reasoning of the sort I am referring to here is what Aristotle called *phronesis*: deliberative reflection of the relationship between means and ends. (p. 44-45).

Building on this understanding, Posner (2005) argues, "if preservice teachers do field experience without thinking deeply about it, if [they] merely allow [their] experiences to wash over [them] without savoring and examining them for their significance, then [their] growth will be greatly limited" (p. 3). Preservice teachers' accounts of well-remembered events / critical incidents can serve as important ways to provide good reasons for their actions and understandings within the context of their program and thus serve as a way for them to begin to articulate their PCKg. While recent scholarship continues to advocate for providing preservice teachers with opportunities to exercise reflective practice, we do not know how the use of tiered assessments or rubrics can elicit, support and capture students' growth as deliberative reflective practitioners. Where methods courses typically have included written reflections to exercise and engage preservice teachers' reflective thinking (Smagorinsky & Whiting, 1995), these approaches are subject to selective memory and lack of supportive evidence (Yerrick, Ross & Molebash, 2005).

In summary, much of this literature and theoretical framework can support student learning in other content areas, not simply teacher education. The tenets of teacher education are salient for improving teaching skills in faculty also and the nature of reflective practice makes it suitable for faculty to use in their own classrooms, particularly when utilized within ePortfolio with cohesion, purpose, and direction. Faculty who learn to synthesize the use of reflective practice both for their students and to inform their own teaching, in addition to learning the skills appropriate for evaluating reflective practice material with rubrics, may find increased understanding of what their students know and can do.

References

- Barr, R., Watts-Taffe, S., Yokota, J., Ventura, M., & Caputi, V. (2000). Preparing teachers to teach literacy: Rethinking pre-service literacy education. *Journal of Literacy Research, 32*, 463-470.
- Calandra, B., Gurvitch, R., & Lund, L. (2008). An exploratory study of digital video as a tool for teacher preparation. *Journal of Technology and Teacher Education, 16*(2), 137-153.
- Cochran, K.F., DeRuiter, J. A., & King, R.A. (1993). Pedagogical content knowing: An integrative model for teacher preparation. *Journal of Teacher Education, 44*, 263-272.
- Fenstermacher, G. D. (1994). The knower and the known: The nature of knowledge in research on teaching. *Review of Research in Education, 20*, 3-55.
- Grossman, P. (1991). *The making of a teacher: Teacher knowledge and teacher education*. New York: Teachers College Press.
- ISETL (2009). International Society for Exploring Teaching and Learning, Purpose statement, Retrieved March 2009, from <http://www.isetl.org/>
- Posner, G. J. (2005). *Field experiences: A guide to reflective teaching*. (6th ed.). New York: Allyn and Bacon.
- Schon, D. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Smagorinsky, P., & Whiting, M. (1995). *How English teachers get taught*. Urbana, IL: National Council of Teachers of English Press.
- Wilson, S., Shulman, L. S., & Richert, A. E. (1987). 150 different ways of knowing: Representations of knowledge in teaching. In Calderhead, J. (Ed.), *Exploring Teachers' Thinking*. (pp. 104-124). London: Cassell.
- Yerrick, R., Ross, D., & Molebash, P. (2005). Too close for comfort: real-time science teaching reflections using digital video. *Journal of Science Education, 16*(4), 351-375.

Using Critical Discourse Analysis (CDA) Methodology to Facilitate Critical Reflection in the Graduate Classroom

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Abstract: According to Wilson and Hayes (2000) and the concept of critical reflection means many different things to many different people. Brookfield (2005) reminds us that the way the term is used in educational settings largely reflects the ideology of the educator using it. Adult educators often drawn upon such intellectual traditions as the Frankfurt School of Critical Social Theory, Neo-Marxism, psychoanalysis, and pragmatist constructivism to foster critical reflection in adult learners. From these perspectives, critical reflection is much more than a cognitive process of evaluating how our values and beliefs guide our actions; instead, it is a complex process of externalizing, investigating, and challenging the historical and cultural origins of our assumptions to develop more authentic ways of knowing and acting (Brookfield, 2000). Methods to engage adults in this kind of learning vary in technique, social purpose, and political thought. Critical discourse analysis (CDA) methodology, with its critical practice agenda, is beginning to show promise for educators to foster meaningful, critical reflection by the unveiling of power relations and how those relations are embedded across our social structures and practices through the everyday things we say and do (Luke, 1995). This work focuses on the role CDA plays in creating opportunities for graduate students of education to critically inquire into their own, and others, practice.

Purpose and Literature

Critical reflection is an increasingly essential component to developing more authentic forms of education and professional practice. With an increase interest in the concept, critical reflection has become a highly contested term that essentially means anything from higher-order mental processing (Kolb, 1984) to ideology critique (Brookfield, 2000). For critical adult educators as Mezirow (1990), Freire (1970), and Brookfield (2005), critical reflection is actually the process of critiquing the presuppositions on which our beliefs have been built to help us make informed actions that can lead to individual and social transformation for the purpose of reaching emancipatory ends through such partnering concepts of consciousness raising and liberation education.

Methods to engage students in critically reflective learning range in political and social purpose and include such practices as self and peer assessment, problem-based learning, and personal development planning (Merriam, Caffarella, & Baumgartner, 2007). Critical reflection is also viewed by some educators as a learning strategy that can be taught using alternative methods including reflective diaries, action learning groups, and autobiographical stories (Brookfield, 2005). In recent years, the analysis of educational discourse through close readings of our everyday practices (e.g., spoken and written texts) has enabled educators to spur the development of critical reflection in the classroom (Luke, 1995).

Luke (1995) and Gee (1999) recognize critical discourse analysis (CDA) as a prominent discourse tradition that can be used as a critical reflection tool. CDA, with its explicitly critical practice agenda, is beginning to emerge in adult education scholarship in a variety of ways. Although it is difficult to treat CDA as a unified project, it is often viewed as an amalgamation of conceptual positions and methods influenced by the techniques of linguistics and theoretical insights of (post)structuralist theory. For Luke (1995), CDA can be described as a bridging together of the “macro approaches to discourse with more microanalytical text analyses” (p. 10). According to Fairclough (1992), CDA in this view enables us to critically and precisely investigate the ways in which larger formations of power are produced and circulated in our everyday educational settings.

While several variations of CDA exist, recent efforts draw upon the scholarship of Fairclough (1992) and Foucault (1972) to focus on the ideological-discursive effects and hegemonic processes of discourse. This approach takes into account the constitutive features of discourse and the heterogeneous and historicized nature of texts (Foucault, 1972), and the concrete instances of textual, discursive, and social dimensions of discourse analysis (Fairclough, 1992). What is particularly important about this framework is its ability to enable educators to self and collectively examine the political and historical aspects of educational activity without forgoing the everyday practice of

discourse in educational settings. According to Luke (1995, p. 12), CDA can help educators better “see” how power relations are produced and circulated in our everyday words and images by illustrating the way “textual constructions of knowledge have varying and unequal material effects and how whose constructions come to ‘count’ in institutional contexts is a manifestation of larger political investments and interests.” It is with this unveiling process that critical reflection can begin.

Description of Practice: CDA in Action

The goal of this session was to gain an understanding of the role critical discourse analysis (CDA) plays as a tool for fostering critical reflection within the context of *graduate-level course work in education*. The presenter first described the pedagogical process of how she contributed to the development of critical reflection with graduate students in two different education research programs. The presenter next described key analytic concepts and procedures that are useful in understanding and applying CDA; shared student learning outcomes from graduate student CDA projects; and described the successes and challenges that are associated with this approach to fostering critical reflection. The session closed with an analytic example that led to a group discussion of the importance for encouraging critically reflective practice with education students through the analysis of educational discourse.

Conclusion

Graduate students in education departments are in a good position to present a sophisticated yet practical account of their assumptions. Of growing importance, however, is the idea that one must make explicit the ways our assumptions operate to help us identify—in order to challenge—inequitable conditions in our communities and classrooms. Engagement with CDA can provide key insights for education students to better recognize, report, and act on the ways in which our practices are politicized. It is imperative that we seek new and better ways to constitute meaningful and equitable education through the facilitation of critical reflection; this discourse methodology can perhaps help us achieve this critical goal.

References

- Brookfield, S.D. (2005). *The power of critical theory: Liberating adult learning and teaching*. San Francisco: Jossey-Bass/John Wiley.
- Brookfield, S.D. (2000). The concept of critically reflective practice. In A. L. Wilson & E. R. Hayes, (Eds.), *Handbook of adult education and continuing education*, (pp. 33-49). San Francisco: Jossey-Bass.
- Fairclough, N. (1992). *Critical language awareness*. London: Longman.
- Freire, P. (1970). *Pedagogy of the oppressed*. (M. B. Ramos, trans.) New York: Continuum.
- Foucault M. (1972). *The archaeology of knowledge*. New York: Pantheon.
- Gee, J. (1999). *An introduction to discourse analysis: Theory and method*. London: Routledge.
- Kolb, D. A. (1984). *Experiential Learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.
- Luke, A. (1995). Text and discourse in education: An introduction to critical discourse analysis. In M. Apple (Ed.), *Review of research in education*. Washington, DC, AERA Association.
- Merriam, S., Caffarella, R., & Baumgartner, L. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed.). San Francisco: Jossey-Bass.
- Mezirow, J., & Associates. (1990). *Fostering critical reflection in adulthood*. San Francisco: Jossey-Bass.
- Wilson, A.L., & Hayes, E.R. (Eds.). (2000). *Handbook of adult and continuing education*. San Francisco: Jossey-Bass.

Using Humor to Enhance the Classroom Climate: Linking Humor and Teaching

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Abstract: Humor can be an effective tool for establishing a climate conducive to learning. The responsibilities of teaching can be daunting and the thought of holding the attention of twenty or more students might even present a challenge to the confident lecturer. Teachers not only need to convey knowledge, understanding, and appreciation regarding their subject but need to do so in a way that engages, interests and be effective (Torok, McMorris, & Lin, 1994). Humor has been found to strengthen the relationship between student and teacher, reduce stress, makes a course more interesting, and, if relevant to the subject, may enhance recall of the material (Friedman, Friedman, & Amoo, 2002). Humor has the ability to relax people, reduce tension, and thereby create an atmosphere conducive to learning and communication.

The role of humor in providing engaging interactions has been researched for past several decades. When used effectively humor can be used as a means to increase student involvement and has a positive effect on the learning process (Ziv, 1988). Additionally, humor facilitates the retention of novel information (Cornett, 1986), increases learning speed (Gorham & Christophe, 1990), and improves problem solving skills. The incorporation of humor is encouraged across all academic disciplines. Humor allows teachers to be creative when creating an environment conducive to learning. Humor is often integrated in various phases of the lesson; the opening to put students at ease or introduce a new topic, as a prompt to check for understanding or as part of closing comments. For example, humor can be used with an icebreaker when starting the class setting the tone for the upcoming lesson. In addition humor can be added when communicating issues regarding classroom management such as the teachers "Top Ten Rules for Success" for correct behavior. Humor is often used as a mnemonic device to enhance retention for material being presented. Humorous breaks can be added during a lesson to transition students from one topic or thought to another, allowing the brain opportunity to process materials. Jokes, anecdotes, riddles, cartoons and funny stories are all forms of humor to convey course content more effectively.

Effective use of humor can help teachers engage students, establish a positive teacher-student rapport, maintain student attention, create an open classroom atmosphere, and ease distress during test. Humor offers instructors the opportunity to become less of a distant figurehead in the classroom and more of a positive communicator of information. Incorporating humor allows students to have a more positive perspective of both the class and the content (Tuber & Mester, 1994).

Literature Review and Discussion

The technique of using humor to "liven up" lectures is as ancient as the Babylonian Talmud. Rabbah (Babylonian Talmud, Shabbos 30b), a Talmudic sage who lived 1700 years ago, would say something humorous before starting a lecture to the scholars, and they would laugh. After that, he would begin his lecture (Pyrzczak, 1998).

Humor broadly define is as an event that elicits laughter. It is not limited to jokes or humorous stories but can include props, puns, short stories, anecdotes, riddles, or cartoons. It can be anything that creates a positive feeling in students making them smile and laugh. Humor is memorable and captures student's attention.

Humor can serve a variety of purposes for the college instructor. It can be used as a powerful tool to put students at ease and make the overall learning process more enjoyable (Korobkin, 1988). Humor has successfully been used to communicate implicit classroom rules, fostering greater understanding and rapport between the teacher and the students aiding in the understanding of classroom management issues (Proctor, 1994).

Although humor can serve as a powerful positive attribute to teach it should be used cautiously. The manner in which humor is delivered also affects how students receive it. Instructors delivering humor through insult or sarcasm may be defeating the purpose served by humor (Brown, 1995; Edwards & Gibboney, 1992). Humor can be an effective tool in any classroom, when used appropriately therefore instructors need to determine the type of humor that is right for them and their students.

Teachers are powerful role models and as such can use appropriate humor in the classroom to enhance a sense of community (Harris, 1989). Berk (1996, 1998) claims that humor has the ability to decrease students' anxiety, improve the ability to learn, and boost self-esteem. This, in turn, can encourage a more receptive learning atmosphere. When students feel safe, they can enjoy the learning process and each other. The thoughtful use of humor by instructors can contribute to teaching effectiveness. Pollio and Humphreys (1996) found that the connection established between the instructor and the student was key to effective teaching. Lowman (1994) reported that effective college teachers were most often described as "enthusiastic", and a strong sense of humor plays a major role in developing a positive learning environment. Humor is useful in facilitating attention and motivation (Bandes, 1988; Bryant et al., 1979; Wandersee, 1982) and comprehension (Gorham & Christophel, 1990).

Research indicates that students learn more from teachers who have humor as part of their pedagogic practices (Garner, 2006; James, 2004; Kher, Molstad, & Donahue, 1999). Humor can be integrated into the classroom in such a way that fosters a sense of openness and respect between students and teachers, the results, when students feel safe. Toro, McMorris, and Lin (2004) asserted that humor has a humanizing effect on the image of instructors. While current literature regarding humor and teaching is sparse the existing body of studies has been favorable toward the use of humor in teaching. Humor can be a catalyst for classroom "chemistry", and when used appropriately, can have the potential to humanize, support, and encourage students to keep thinking.

References

- Bandes, B. (1988). *Humor as motivation for effective learning in the classroom*. Doctoral dissertation, Columbia Teachers College.
- Berk, R. A. (1996). Student ratings of 10 strategies for using humor in college teaching. *Journal of Excellence in College Teaching*, 7, 71-92.
- Berk, R. A. (1998). *Professors are from mars and students are from snickers*. Madison, WI: Mendota Press.
- Brown, J. (1995, September/October). Funny you should say that: Use humor to help your students. *Creative Classroom*, 10, 80-81.
- Bryant, J., Comisky, P., & Zillmann, D. (1979). Teachers' humor in the college classroom. *Communication Education*, 28, 110-118.
- Cornett, C. E. (1986). Why get serious about humor? *In Learning through laughter: Humor in the classroom*. Bloomington, IN: Phi Delta Kappa Educational Foundation.
- Friedman, H., Friedman, L., & Amoo, T. (2002). Using humor in the introductory statistics course. *Journal of Statistics Education*, 10(3).
- Garner, R. L. (2006). Humor in pedagogy. *College Teaching*, 54(1), 177-180.
- Gorham, J., & Christophel, D. M. (1990). The relationship of teachers' use of humor in the classroom to immediacy and student learning. *Communication Education*, 39, 46-62.
- Harris, J. J. (1989). When jokes are not funny. *Social Education*, 53, 270.
- James, D. (2004). A need for humor in online courses. *College Teaching*, 52, 93-94.
- Kher, N., & Molstad, S. (1995, April). Top ten lists as pedagogical aids: Using humor to enhance teaching effectiveness in "dread courses." Presented at Northwestern University Research Day, Natchitoches, LA.
- Kher, N., Molstad, S., Donahue, R. (1999). Using humor in the college classroom to enhance teaching effectiveness in "dread courses". *College Student Journal*, 33(3), 400.
- Korobkin, D. (1988). Humor in the classroom: Considerations and strategies, *College Teaching*, 36, 154-158.
- Loomans, D., & Kolberg, K. (1993). *The laughing classroom: Everyone's guide to teaching with humor and play*. Tiburon, CA: H. J. Kramer.
- Pollio, H. R., & Humphreys, W. L. (1996). What award-winning lecturers say about their teaching: It's all about connection. *College Teaching*, 44, 101-106.
- Proctor, R. F. (1994, April). *Communicating rules with a grin*. Paper presented at the annual meeting of the Central States Communication Association, Oklahoma City, OK.
- Pyrczak, F. (1998). *Statistics With a Sense of Humor*. Los Angeles, CA: Pyrczak Publishing.
- Tauber, R.T., & Mester, C.S. (1994). *Acting lessons for teachers*. Westport, CN: Praeger.
- Torok, S. E., McMorris, R. F., & Lin, W. (2004). *College Teaching*, 52(1), 14-20.
- Wandersee, J. H. (1982). Humor as a teaching strategy. *The American Biology Teacher*, 44, 212-218.
- Ziv, A. (1988). Teaching and learning with humor; Experiment and replications. *Journal of Experimental Education*, 57, 5-15.

Using Ill-Structured Problems To Develop Metacognitive Strategies

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Abstract: One of the major challenges faced by post-secondary educators is transitioning students from acquiring knowledge to developing the problem-solving skills required for use in the real world. Students need critical thinking skills to face the challenges they will likely encounter after graduation. Ill-structured problems offer opportunities for students to learn to construct and defend reasonable solutions (Daniels, Carbone, Hauer, & Moore, 2007). Furthermore, collaborative tasks promote active learning and higher order thinking (Jonassen, 2000).

An ill-structured problem is incompletely defined and not easily resolved with any degree of certainty. Furthermore, it has multiple solutions with none clearly superior. Cognitive psychology suggests three types of knowledge interact during critical thinking when addressing ill-structured problems: (1) declarative knowledge; (2) procedural knowledge; and (3) metacognition (Jonassen, 1997).

By contrast, a well-structured problem is one which can be solved with a high degree of certainty by following a logical step-by-step procedure. Although well-structured problems are more convenient for managing curricula objectives and assessment of learning, such problems are typically ineffective for teaching the critical thinking skills necessary to face the challenges students will likely encounter after graduation (Daniels, Carbone, Hauer, & Moore, 2007).

Most problem-solving models involve processes appropriate for solving well-structured problems. Solving ill-structured problems, though, demands high-level reasoning skills (Shin, Jonassen, & McGee, 2003; Jonassen, 2004). Therefore, solving ill-structured problems can be difficult for novices (Jonassen, 1997), especially those who present critical thinking weaknesses in problem solving (Carrithers, Ling, & Bean, 2008).

The nature of unguided collaborative processes may also inhibit problem solver success, particularly when intra-group dynamics involve negative social-emotional peer interactions. Inequity in participation levels, conflict avoidance, and negative evaluations often reduce creativity and minimize benefits (Troyer & Youngreen, 2009; Kapur & Kinzer, 2009).

To successfully engage students in solving ill-structured problems, teachers must consider problem definition and structure (Lee & Cho, 2007), presentation of objectives (Butler, Schere, & Reiter-Palmon, 2003), motivation strategies (Song, 2005; Song & Grabowski, 2006). They must also provide adequate support structures (Kapur, 2008) and cognitive tools (Chen & Ge, 2006). Finally, they must help students to develop social structures that promote collaborative participation (Troyer & Youngreen, 2009; Kapur & Kinzer, 2007) and serve as metacognitive guide (Chin & Chia, 2005) providing dynamic and timely situational support (Ge and Land, 2004) as students work through the problem-solving process.

This interactive session examines how ill-structured problems may help students learn to apply metacognitive strategies in the classroom. It also examines the benefits and challenges of teaching appropriate critical thinking and reasoning skills.

References

- Butler, A. B., Scherer, L. L., & Reiter-Palmon, R. (2003). Effects of solution elicitation aids and need for cognition on the generation of solutions to ill-structured problems. *Creativity Research Journal*, 15(2/3), 235-244.
- Carrithers, D., Ling, T., & Bean, J. C. (2008). Messy problems and lay audiences: Teaching critical thinking within the finance curriculum. *Business Communication Quarterly*, 71(2), 152-170.
- Chen, C., & Ge, X. (2006). The design of a web-based cognitive modeling system to support ill-structured problem solving. *British Journal of Educational Technology*, 37(2), 299-302.
- Chin, C., & Chia, L. (2005). *Problem-based learning: Using ill-Structured problems in biology project work*. Wiley InterScience.
- Daniels, M., Carbone, A., Hauer, A., and Moore, D. (2007). *Ill-structured problem solving in engineering education*. Paper presented at the 37th annual Frontiers in Education Conference, Global Engineering: Knowledge Without Borders, Opportunities Without Passports.
- Ge, X., & Land, S. M. (2004). A conceptual framework for scaffolding ill-structured problem-solving processes using question prompts and peer interactions. *Educational Technology Research and Development*, 52(2), 5-22.
- Jonassen, D. H. (2000). Toward a design theory of problem solving. *Educational Technology Research and Development*, 48(4), 63-85.
- Jonassen, D. H. (2004). *Learning to solve problems: An instructional design guide*. San Francisco: Jossey-Bass.
- Jonassen, D. H. (2007). Instructional design models for well-structured and ill-structured problem-solving learning outcomes. *Educational Technology Research & Development*, i, 65-94.
- Kapur, M. (2008). Productive failure. *Cognition & Instruction*, 26(3), 379-424.
- Kapur, M., & Kinzer, C. K. (2007). Examining the effect of problem type in a synchronous computer-supported collaborative learning (CSCL) environment. *Educational Technology Research and Development*, 55, 439-459.
- Kapur, M., & Kinzer, C. K. (2009). Productive failure in CSCL groups. *Computer-Supported Collaborative Learning*, 4, 21-46.
- Lee, H., & Cho, Y. (2007). Factors affecting problem finding depending on degree of structure of problem situation. *The Journal of Educational Research*, 101(20), 113-124.
- Shin, N., Jonassen, D. H., & McGee, S. (2003). Predictors of well-structured and ill-structured problem solving in an astronomy simulation. *Journal of Research in Science Teaching*, 40(1), 6-33.
- Song, H. (2005). Motivating ill-structured problem solving in a web-base peer-group learning environment. *Educational Computing Research*, 33(4), 351-367.
- Song, H., & Grabowski, B. L. (2006). Stimulating intrinsic motivation for problem solving using goal-oriented contexts and peer group composition. *Educational Technology Research and Development*, 54(5), 445-466.
- Troyer, L., & Youngreen, R. (2009). Conflict and creativity in groups. *Journal of Social Issues*, 65(2), 409-427.

Using the LACK Framework to Organize Your Teaching

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Abstract: LACK is a theoretical framework for creating successful learning environments. There are four integral principles in the LACK framework that interact with one another. In short, LACK stands for creating learning environments that are Learning-centered, Assessment-centered, Community-centered, and Knowledge-centered. This is a framework that works across disciplines, from Education to Physics. We discuss supporting research and theory behind the framework and show how the LACK framework can positively impact instruction

The School of Teacher Education and Leadership (STEL) at Radford University has adopted the LACK framework to guide the way we teach and interact with our students. This framework is based on How People Learn, a seminal report on teaching and learning theory by the National Research Council (NRC). There are four guiding principles in the LACK framework. In short, LACK stands for creating environments that are Learner-centered, Assessment-centered, Community-centered, and Knowledge-centered. Integral to this framework is the belief that these characteristics overlap and interact with one another (Bransford, 2000). Below is a brief discussion of each characteristic accompanied by a sampling of ideas for practical implementation in the college environment.

The first characteristic entails creating Learner-centered environments, which incorporate the “knowledge, skills, attitudes, and beliefs that learners bring to educational settings” (Bransford, 2000, p. 133). Teachers who embody this principle are culturally responsive to the needs of their students and also provide safe environments for students to discover and challenge existing misconceptions. Teachers can take advantage of this prior knowledge at the beginning of the semester by having students do “autobiographies” where they write about their experiences in a field. For example, in geography, students could write about the different landforms that they have experienced when traveling.

The second characteristic in the LACK framework involves creating an Assessment-centered environment. Good assessments involve making students’ thinking visible. This can take many forms. One example would be having students self-assess themselves. With the growth and availability of technology it is easier for students to video and self-assess themselves as they practice new skills (e.g., oral presentations or teaching lesson plans). There are also benefits to having students work collaboratively in groups where they can give immediate feedback that result in online revisions (Bransford, 2000).

The third characteristic, Community-centered, requires teachers to create classrooms where it is safe to make mistakes and to try on new ways of thinking. Teachers must create communities of inquiry, where questions are welcomed. A practical application of this is requiring students to know each other’s names. There are many activities that can be easily incorporated into class time to encourage this learning. Finally, creating community-centered environments involve making connections to the larger community (Bransford, 2000). This requires teachers to connect what is going on in the classroom to the larger world. Teachers can provide assignment opportunities that involve working in practical settings in the surrounding community. With the availability of the internet and blogging, students can even reach to the wider community of the world.

The final characteristic, Knowledge-centered, is about helping learners construct an integrated understanding of a discipline. One practical way to do this is to teach students to review for quizzes and tests by using graphic organizers called FRAMES, which are visual ways to show the relationships and organization of key concepts. Other key principle involves assisting students as they figure out what mastery looks like in their chosen domain. Having guest lecturers from the community and past students speak can go far in achieving this goal.

Description of the practice to be exemplified

Educators can use the LACK framework to develop a well-rounded instructional program. The following graphic organizer can assist in self-reflection on current instruction and goal setting for the future. It helps the educator step

back from daily instruction to see the larger educational picture and set realistic goals for achieving it. See below for a sample.

LACK Diagnostic Questions	My Classes
Learner-Centered 1. What strategies and tools help me better understand the students' pre-existing knowledge, skills, attitudes, and beliefs? 2. What strategies and tools help students "construct their own meanings, beginning with the beliefs, understandings, and cultural practices they bring to the classroom" (p. 136)?	I do this now:
	I want to do this:
Assessment-Centered 1. What strategies and tools help me provide frequent opportunities for student feedback, reflection, and revision?	I do this now:
	I want to do this:
Community-Centered 1. What strategies and tools help me create a 'risk-free' environment where they feel free to make mistakes in order to learn? 2. What strategies and tools help me foster intellectual camaraderie and/or community in the classroom? 3. What strategies and tools help me connect the students to a larger community outside the classroom?	I do this now:
	I want to do this:
Knowledge-Centered 1. What strategies and tools help me focus attention on what is taught and why it is important? 2. What strategies and tools help me organize content around big ideas or important concepts?	I do this now:
	I want to do this:

References

Bransford, J. (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.

Virtual Internships...Wave Of The Future Or Passing Fad

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Abstract: Can a virtual internship provide a truly educational experience in comparison to a traditional, on location internship? Does a student in a remote area of the country have to accept that not being close to a music center precludes them from an internship with a major corporation in the business? This paper looks at internships within the music industry and, specifically, artist and repertoire internships. Traditional internships require a student to move to a one of the core music business locations to have a viable internship with a major corporation, but a virtual internship can provide the tools necessary to be successful and have an outstanding learning experience without having to be on site. This paper will review the key components to a good internship and will conclude with a case study. The case study is an overview of a virtual internship that was completed from September 2009 to December 2009. Working for a talent agency in California, RM64, a student from southwest Virginia is able to scout for talent and present findings, through a password protected Internet site, to other scouts as well as industry executives. Using a social networking platform, RM64 created a community of talent from across the nation. With an innovative approach, RM64 is leading the music industry in cataloging new talent. This paper uses the reflections of one intern to examine the effectiveness of a virtual internship for an educational purpose.

Virtual Learning of Traditional Native American Students in Higher Education using Native Ways of Knowing

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Abstract: Attainment of higher education is difficult for traditional Native Americans. When learning in natural settings, Native Americans for centuries have used their Native Ways of Knowing to access and process information. These Indigenous learners bring their social, cultural, and historical contexts with them to new learning situations. Native Ways of Knowing comprise an epistemological stance socially derived from and culturally bound to Tribal contexts, a sharp contrast from the Western epistemology embraced by most institutions of higher education. This work is a descriptive case study conducted at one of the U.S. Tribal colleges in 2008-09. The study provided further understanding of the distance online learning experiences of traditional Native American learners in three online courses designed according to Native American epistemology. The study, conducted according to Indigenous research guidelines, found that Native American students learn effectively within online learning environments when they worked with an instructor who modeled Native Ways of Knowing in course design and implementation. The study also found that their success depended on adequate access to technology, computer literacy, an effective and user- friendly learning management system, support and mentoring.

Twenty-six percent of Native Americans live below the poverty level (U.S. Census, 2000). They face geographic isolation as well as significant unemployment with few opportunities available. “This poverty is often accompanied by a range of social problems – injuries and violence, depression, substance abuse, inadequate health care and prenatal health care, unhealthy or insufficient diets, and high rates of diabetes – that can greatly affect the ability and desire to pursue education” (Institute for Higher Education Policy (IHEP), 2007). Attainment of higher education is difficult for traditional Native Americans. According to 2004 figure, representing all Native Americans over 25 years of age, 28 percent were not high school graduates and only 42 % sought higher education, with a 13 percent graduation rate (IHEP, 2007).

Little is known about the learning processes of traditional Native American learners engaged in online learning. The voices of these learners describing their experience with online learning were first expressed in a study by Tyro (2004). We do know that instructional designers and instructors tend to prepare online education according to their own frames of reference; online learning is not culturally neutral (Chen, Mashhadi, Ang, & Harkrider, 1999). The epistemology of traditional Native American learners originates in Tribal contexts and it is possible that there are over 500 Native Ways of Knowing (NWOK) within the over 500 Tribes in the United States. NWOK are significantly different from Western Ways of Knowing. NWOK provides a lens through which traditional Native American learners understand their world. Instead of a linear and rather disconnected understanding typical of Western Ways of Knowing, NWOK are interconnected, spiritual, spatial, and rooted in survival of the culture. These learners bring their own lived experiences and interpretations of those experiences into their learning (Cajete, 1994). The study described in this presentation illustrates that online learning for traditional Native American learners occurs within a larger social, economic, and political context (Fire, 2009). Two research questions guided the study:

1. What are the learning experiences of traditional Native American adult learners engaged in distance online education provided by a Tribal college?
2. What are the contextual influences upon these distance online learning experiences?

Interview data from 8 students, faculty, administrators, and information technology professionals involved in distance learning at the Tribal College sheds light upon the complex dynamics surrounding distance education for Native populations. We learned that traditional Native American students learn effectively within online environments when they have access to: culturally appropriate content and learning strategies, adequate technology, computer skills and support, a user-friendly learning management system, and social support from extended family, friends, and the college (Fire, 2009).

Emerging lesson from Finding 1. Student learning is positively impacted by an instructor who formed relationship-based, “mind to mind” interactions with the online learners to connect them with their own Native context and scaffold to new learning. This role of the instructor is central to student learning and was described by the instructor when she said, “building self confidence takes a change in a mind set in a person. In my mind, you are important; you can do the work. I’m going to help you get to your goals and we are going to work together as a team to do that.” She provided a safe place for the students to work within the online environment and said, “The students will feel very confident and very comfortable that they will be able to do the work and tell me anything because it’s a safe place. I am not going to judge them.”

Emerging lesson from Finding 2. The second finding helped in understanding how the learners responded to the teaching. The emerging lesson was that learners were not only learning content, but also learning about their own ways of learning, developing the inner resources they brought with them to the learning. These students were able to discover missing evidence of their own powerful history as Native Americans; the instructor and the Tribal college experience gave them the support to engage in this discovery. The learners were on their own learning journey and the instructor joined them to co-construct knowledge (Cajete, 1999). One of the students said:

It was just amazing to me that when I was a little girl, I used to think that the only Indians were in my state. I never knew Indians were all over. I did not know that...and so now, I am like one of these days maybe I’ll be in a traveling nurse when my kids are grown and gone and I’ll get to go out and explore the United States and just see the different cultures.

Emerging lesson from Finding 3. Effective online learning for Native Americans was a reality at this Tribal College, not only because of the effective pedagogy and experiences of the learners described above, but also because of the support of the resources which were part of the larger context of the distance learning system (Lambert, 2004). These resources included financial aide, technology support, administrative support for faculty development and IT software design and server support, and distance access to library, bookstore, and advising.

References

- Cajete, G. A. (1994). *Look to the mountain: An ecology of Indigenous education*. Durango, CO: Kivaka Press.
- Chen, A.-Y., Mashhadi, A., Ang, D., & Harkrider, N. (1999). Cultural issues in the design of technology-enhanced learning systems. *British Journal of Educational Technology*, 30(3), 217.
- Engestrom, Y. (2001). Expansive learning at work: toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14(1), 133-156.
- Fire, N. (2009) *A contextual perspective of traditional Native American distance online learning in a Tribal college*. Ed.D. dissertation. Retrieved December 7, 2009, from Dissertations & Theses, North Carolina State University, Raleigh, NC. (Publication No. AAT 3357705).
- Institute for Higher Education Policy. (2007). *The path of many journeys: The benefits of higher education for Native people and communities*. Retrieved from <http://www.ihep.org>
- Tyro, F. (2004). *More than smoke signals: An examination of the experience of online American Indian students at Salish Kootenai College*. Unpublished Dissertation, Union Institute and University, Cincinnati, OH.
- U.S. Census Bureau. (2000). *Census 2000: American Indian and Alaska Native Summary File (AIANSF)*. Retrieved from <http://www.census.gov/Press-Release/www/2004/AIANSF.html>

Walking the Walk: Models of Collaborative Curricular Planning

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Abstract: Informal curricular collaboration exists everywhere in higher education. Collaboration helps serve programmatic goals of consistency in a centralized curricular context, promoting the goals of learner-centered education and facilitating professional development. Nevertheless, the teacher's podium remains a lonely place. The model of the solitary professor--accountable only to his/her teacher evaluations--still prevails in many institutions. Moreover, the myth of the professor as sole authority, wounded artist, and lone scientist still holds. Ultimately, this solitude is increasingly anachronistic. As we prepare students for a world that wants people who can work well in teams and participate in civic decision-making, collaborative curricular planning provides faculty the opportunity to model these kinds of behaviors for our students. Generally, when people think about collaboration in educational contexts, they think of team-teaching. We want to shift the emphasis to collaborative planning because the opportunities for team-teaching are relatively rare compared to the many possibilities for collaborative course planning present in most academic departments. In our panel, we will describe and model a spectrum of five types of curricular collaboration: department-wide collaboration; spousal collaboration; mentoring; collaborative partnerships; external (intra-university and extra-departmental) collaboration. This spectrum of models offers participants a range of ways to consider adopting collaborative planning and teaching techniques. These models are relevant to first-year composition and rhetoric courses with multiple sections of the same class. However, as we shall argue, these models are equally valuable to departments that offer large classes taught by different instructors in multiple sections. Collaborative curricular models allow for individual innovation and autonomy for instructors while still ensuring consistent learning outcomes at the programmatic level. More specifically, collaborative curricular planning has been demonstrated to improve the effectiveness of teaching in at least four ways: it forces teachers to interrogate their processes and purposes; it provides teachers a wider pool of ideas to draw upon; it creates solidarity among faculty with shared purposes; and, finally, it breaks down individualistic models of teaching and learning. The models and ideas discussed in this practice session were developed in Focused Inquiry, an innovative common course for first-year students at Virginia Commonwealth University. In this practice session, we would like to explore with attendees how these models (and other models) might promote productive curricular collaboration. In addition, this session will explore administrative and cultural conditions that make such collaboration possible.

What Were We Thinking: Team Teaching in an Upper Level Graduate Course?

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Cermetrius Bohannon, *Architecture*
Penny Burge, *School of Education*
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Abstract: A faculty member and a librarian met during the fall of 2008 when a library session was requested for research in education to a Qualitative Methodology class. Both the instructional faculty member and faculty librarian had personal and research interests in Qualitative methods and they began to discuss the idea of co-teaching or working together on a qualitative class. In the fall of 2009 the teaching faculty member and university librarian decided to co-teach a qualitative methodology course together. Each brought various strengths that complimented the other. Students had two instructors instead of one. Research and learning relationships were built not only between faculty members but with students as well.

This practice session was a discussion on that faculty/librarian partnership and perspectives from students in the class. Two students from the class were an integral part in the practice session, giving their own insights and ideas about the faculty/librarian collaboration. The course, activities, and what each faculty member brought to the class were shared. The class was focused on introductory qualitative research and practice in reading and writing in qualitative methodology. Students also conducted their own qualitative study which involved IRB approval, interviews, transcription, analysis, and discussion. Students from the class, who had also co-taught classes in other settings, discussed the activities, the class, as well as their ideas about having instructional and librarian co-instructors.

Literature Review

Collaboration between instructional faculty and librarians in a higher education setting has the potential to create strong partnerships that can aid in instruction and student learning. Raspa and Ward (2000) describe a successful collaboration must have strong communication, perseverance and a common goal or task. Faculty and librarians have to come together, share ideas, see how each person's strengths can aid toward the class outcomes, and work in tandem to create the best class and student experience. Manuel, Beck, and Malloy (2005) found that faculty wants their students to have strong skills in library and information studies and having collaboration with a university librarian can aid in enhancing those skills.

References and Recommended Reading

- Brown, J., & Duke, T. (2005). Librarian and faculty collaborative instruction: A phenomenological self-study. *Research Strategies*, 20(3), 171-190.
- Buchanan, L., Luck, D., & Jones, T. (2002). Integrating information literacy into the virtual university: A course model. *Library Trends*, 51(2), 144.
- Culpepper, J. (2008). An interdisciplinary approach to preventing plagiarism: A librarian - social work educator collaboration. *Journal of Social Work Values & Ethics*, 5(1), 1-3.
- Davis, J. (1995). *Interdisciplinary courses and team teaching*. Phoenix: American Council on Education/Oryx Press.
- Klein, J. (1996). *Crossing boundaries: Knowledge, disciplinarity, and interdisciplinarity*. Charlottesville: University Press of Virginia.
- Manuel, K., Beck, S.E., & Malloy, M. (2005). An ethnographic study of attitudes influencing faculty collaboration in library instruction. *The Reference Librarian*, 89/90, 25-38.
- Raspa, D., & Ward, D. (2000). *The collaborative imperative: Librarians and faculty working together in the information universe*. Association of College and Research Libraries, Chicago.
- Ulmer, J., & Fawley, N. (2009). Cultivating the librarian within: Effectively integrating library instruction into freshman composition. *International Journal of Learning*, 16(7), 415-423.

Working in the Newsroom: A Collaborative Problem-Based Learning Approach

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Abstract: This session presents a model of problem-based learning that was developed in the Production Technology and Journalism tracts in the School of Communication at Radford University. The model uses real-world scenarios found in newsrooms and demonstrates some of the advantages and successes of problem-based learning and the desired student learning outcomes. The principles involved are applicable to other disciplines and interdisciplinary endeavors, can be used in curriculum development and reorganization, and may be applied to existing classes allowing for immediate access to some of the benefits of active, problem-based learning.

The specific example modeled deals with two groups of students enrolled in three separate classes. Journalism students enrolled in the Electronic News Gathering class work with Production Technology students who are concurrently enrolled in two separate, but related, classes of Electronic Field Production and Video Editing and Effects. Students in the Journalism and Production Technology tracts are introduced to each other and how they will work with each other, but initially have separate assignments. Production students begin with an assignment that requires them to tell a visual story by filming and editing something from around campus. The second assignment is more complex and builds on the first one. During this time they have continued to receive classroom instruction and demonstrations of how to use the equipment and software and are also reading and gaining theoretical knowledge that they need to apply to the second project. Similarly, the journalism students start out with writing assignments that build in complexity and difficulty.

During this process, the three faculty members teaching the courses meet to form students into teams based on their abilities, compatibilities of schedule, and demonstrated work ethics. For the third major project students are working together on creating a news package such as would be shown on a local television station. Teams have to work together to write, schedule interviews, reserve equipment, shoot, and edit material. They work as a professional news team in completing the assignment. The fourth project is similar in scope and in content, but typically the students have been assigned new partners and more is expected of their work as they progress in their classroom learning and assigned readings.

By doing a series of increasingly difficult projects with real-world application, students become invested in the learning process. Their projects are not graded with letter grades, but are judged acceptable or unacceptable by professional standards. Students become responsible for learning the skills and theory that they will need to produce professional quality work.

One of the primary goals of problem-based or active learning is to get beyond the skills of memorization and move to higher levels of application and learning. Numerous studies on active learning show that participating in the learning process helps people not only learn more but also learn better. These classes are designed to provide hands-on experience with material and create project goals that require students to create something by learning and applying skills.

Another important element in this model is the use of groups to promote cooperative or peer learning. Cooperative learning occurs in small groups and students learn from interacting with each other (Doolittle, 87). Additionally, people are often required to work with others in groups in a professional environment. By having both journalism and production students involved in the same projects, they learn not only the material and requirements of their class, but those that their partners labor under as well. It is truly a collaborative effort. Students also perform as if they were in a professional environment. They sign a contract and are expected to adhere to professional behavior and produce professional quality work by the end of the semester. This provides preparation for the experience students will face in the workforce.

Another important element of this model is the progressively more difficult structure of student projects that use a form of scaffolding in which projects appear to be beyond the students' ability without help at the beginning of the

semester. However, by the end of the semester, they can accomplish the project unaided. Vygotsky's Zone of Proximal Development suggests that students learn when the challenge is not so difficult to frustrate the student nor so easy as to bore him or her. "Only instruction that is within the student's zone of proximal development will be effective toward advancing growth and development" (Doolittle, 92). Therefore the projects are designed to become progressively more difficult and incorporate more and more evaluation criteria and expectations as the student starts to gain those skills.

Peer assessment is another essential element. Each of the required projects has two submissions. For the first submission all the students and professors meet together to evaluate and critique the projects as well as look at professional examples. Students and faculty comment on the projects, discuss them, and evaluate them compared to professional projects. As Topping argues, this kind of assessment is "intended to help students plan their own learning, identify their own strengths and weaknesses, target areas for remedial action, and develop meta-cognitive and other personal and professional transferable skills" (249). The three faculty members participate in order to help students understand professional standards and develop what Topping describes as "a vocabulary for thinking about and discussing quality" (255). Students then have the opportunity to immediately apply this knowledge and experience and rework their projects so that they can conform to the discussed standards.

One of the other major advantages of this particular model is that it not only benefits the students, but also the involved faculty. In academia, faculty are most often left to themselves with relatively little opportunity to learn from and interact with one another in the classroom. Teaching is mostly a solitary affair with one teacher interacting with the students. Using this model, faculty have the opportunity and indeed the necessity of learning from each other. Techniques are shared, student concerns and problems are discussed and successes as well as failures provide valuable information to the faculty. While a model like this one is somewhat logistically difficult to schedule in that it involves careful coordination among three faculty members, the pre-planning required allows for a smoother and more organized semester and provides frequent opportunities for the faculty to discuss and modify their pedagogical approaches and decisions. This not only leads to valuable collaboration in the classroom, but can also lead to collaboration outside the classroom and the pleasure of discovering mutual or compatible research and professional interests.

Discussion among session participants is directed towards encouraging participants to think about how they might incorporate collaborative problem-based learning in their own classes. Participants are encouraged to share ideas and evaluate how these teaching techniques will benefit themselves and their students. Additionally, they develop ideas for incorporating peer assessment, and a better understanding of collaborative work among students and faculty.

References

- Doolittle, P. E. (1997). Vygotsky's zone of proximal development as a theoretical foundation for cooperative learning. *Journal on Excellence in College Teaching*, 8(1), 83-103.
- Topping, K. P. (1998). Assessment between students in colleges and universities. *Review of Educational Research*, 68(3), 249-276.

Poster Sessions

<http://www.cider.vt.edu/conference/>

AlgoViz Portal: Lowering the Barriers for Entry into an Online Educational Community

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Abstract: Algorithm Visualizations (AVs) have long been used for motivating students in exploring the core concepts of data structure and algorithms. Teachers often use visualization as a way to engage students in learning the topic (Grisson, McNally, and Naps, 2003). Many visualizations are available on the web, but most are of low quality and do not explain the concepts clearly. Due to the scattered and mostly unorganized development of prior AVs, teachers face difficulty finding the right AV for their class. Lack of knowledge of how to deploy an AV in class also deters faculty from using AVs (Shaffer, Cooper and Edwards, 2007). The AlgoViz Portal (<http://algoviz.org>) supports the use of AVs in Computer Science courses. It currently hosts a catalog of around five hundred AVs along with their description and related information. The AlgoViz Portal demonstrates a new model for an active online education community. Rather than focus on presenting a digital library of information, we focus on supporting the community, which will gain momentum only when its members participate and share their experiences. To facilitate this process of sharing and engaging in a community discussion, we are working on lowering the barrier for entry into the community. Although registration is required for contributing to the site, we allow third-party sign-in using Google, Yahoo or OpenID. If users want to stay updated on a particular topic or AV, they can choose to receive updates via different notification streams like email or Twitter. We promote high quality AVs prominently at the site to encourage users to get started with using an AV. Registered users can create content of various types to reflect their thoughts and ideas, particularly through the forums section. Users may comment on any post or rate and review AVs. We have created a special content type, the “Field Report,” to help teachers share their classroom experience using AVs. To help focus our efforts and to evaluate what works in our community-building efforts, we track user activity using both a relational database and through Google Analytics.

References

- Grisson, S., McNally, M. F., & Naps T. (2003). Algorithm visualization in CS education: Comparing levels of student engagement. *Proceedings of the 2003 ACM symposium on Software visualization, San Diego, CA*, 87-94.
- Shaffer, C.A., Cooper, M., & Edwards, S. H. (2007). Algorithm visualization: A report on the state of the field. *SIGCSE Bulletin*, 39(1), 150-154.

Becoming a Responsive and Reflective Learner in the ‘Toughest’ Studio

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Abstract: Students of landscape architecture are expected to develop their creative design abilities and a corresponding set of professional skills as they traverse a carefully orchestrated five-year curriculum. Foundational courses in design, theory and methods introduce a multitude of concepts in the first five semesters. In the sixth semester, their facility with the content of these courses is tested in a design studio course that simulates the making of a design project from problem identification through development of a design proposal and ultimately to the crafting of a set of construction drawings. This course establishes the profession’s expectations in articulating a defensible design solution in a real world setting. Understandably, LAR 3016 is reputed to be the toughest studio in the ten-course sequence. Studio education is a proto-type of individual and collective learning-by-doing under the guidance and mentorship (criticism) of the teacher (Burchard, Virginia Polytechnic Institute and State University. College of Architecture and American Institute of Architects. 1971; Schön 1983; Malecha 1985). The reflective

practicum incorporates relevant applied theory and methods in close proximity to project design, and takes forms most immediately useful to practice. This repertoire of potentially useful examples is employed to build ways of seeing and inquiring that can be employed in practice situations (Schön and RIBA Building Industry Trust. 1985; *Erasing Boundaries—Supporting Communities* 2008). All the while, responding to an epistemology of practice that exists in uncertainty, complexity and uniqueness. Over the last three years, I have re-conceptualized the course to incorporate more of the epistemology of practice such that students can learn and respond to the complexity of design while learning and practicing the skills necessary for entry into the profession. The teaching and learning enacted in this course incorporates multiple dimensions of problem-solving and problem-setting while students and faculty demonstrate professional expectations and capabilities in project design, design-detailing and communication. The semester-long project is community-based. The project has a client, and the client has need of the students' site design proposals. Immediately the project has relevancy outside of the academic setting. The students begin with the client's validation of their developing expertise. Over the course of the semester students work with the client and faculty to (1) set and identify the problem(s), (2) pose conceptual solutions, (3) develop their individual solutions while meeting contemporary building standards, and (4) produce a comprehensive set of construction documents. Each phase of the project entails significant development of each student's design and communication skills. In landscape architecture, successful practitioners are those that are able to communicate the 'dream in their head.' It can only be realized when the client believes as well. While this teaching and learning research project is still in progress, initial assessments of their course work and progress in successive studios indicate that students are developing a higher capacity to respond to project complexities while making viable design proposals.

References

- Burchard, C. (1971). Portfolio AIA fellowship nomination. Virginia Polytechnic Institute and State University. College of Architecture and American Institute of Architects.
- Erasing boundaries—Supporting communities*. (2009, December). Retrieved from <http://www.esf.edu/erasingboundaries/program.htm>
- Malecha, M. J. (1985). *The design studio*. La Verne, CA: Architecture and Research.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Schön, D. A., & RIBA Building Industry Trust (1985). *The design studio: An exploration of its traditions and potentials*. London: RIBA Publications for RIBA Building Industry Trust.

Building an Online Educational Community

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Abstract: We discuss issues related to creating and building successful online educational communities. In particular, we focus on communities of instructors within a given content domain. We seek to establish a new model for online educational communities, based less on the "digital library" model of information gained by going to a site and searching for information. Instead, the focus should be on community-driven content through community members' discussions, reviews, and ratings of the available content. One example of an online educational community is the AlgoViz Portal (<http://algoviz.org>), which seeks to support the use of Algorithm Visualization in Computer Science courses. The AlgoViz Portal supplies content in the form of a large listing with appropriate documentation about Algorithm Visualizations. It supports community-driven content in the form of user reviews and ratings of Algorithm Visualizations, discussions of best practice, and "Field Reports" contributed by the community that document actual experiences with Algorithm Visualizations in the classroom. Since the focus is on the user-contributed content, the online community can succeed only if there is a sufficient level of contribution and community activity. Potential contributors are more likely to contribute to discussions when they see that others are

doing likewise. Thus, a critical mass of activity is key to success. To gain this critical mass, we must lower barriers to participation in the community and provide incentives to participate. One mechanism to encourage contribution by community members is incorporating information from the online content and from community contributions into notifications sent to the community members when "interesting" things happen at the site. The user should define what they would find interesting. Notifications should come to the users in ways that they naturally use. This includes traditional dissemination mechanisms (websites for collections, forums, email, online blogs and newsletters), or newer notification streams (such as Twitter, RSS feeds, and social networking sites where users subscribe to notifications as part of their everyday online life). Consider the commercial site Amazon.com. While the backbone of Amazon is its catalog and purchasing infrastructure, Amazon has much more than this from a community standpoint. An important component to Amazon's success is a rich collection of community-generated ratings and reviews. A successful online educational community is more than just digital library. It also includes community-added content that raises the value of the information beyond that of a traditional digital library. This includes discussion among the community of best practice, and user evaluation for the items in the library. Due to the size of its user base, Amazon is successful even though only a small fraction of one percent of their customers ever provide ratings or reviews. An online educational community for a topic such as algorithm visualizations has an additional burden, since it must get a higher percentage of the potential "market" to actively engage. Fortunately, members of that "market" also have a greater incentive to become active participants.

CLUSTER: An Informal/Formal Partnership for Pre-Service Science Teacher Training

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Abstract: According to a 2003 U.S. Department of Education Report (Wilson, Floden, & Ferrini-Mundy) fieldwork and internships are not usually well-connected to the university components of teacher training, and classroom experiences tend to focus more on observations and mechanical participation (like grading papers) and less on actual teaching opportunities. Hartley & Whitehead (2006) describe the need for reflective practice in pre-service teacher training, which would require authentic experiences to reflect upon. The CLUSTER project (Collaboration for Leadership in Urban Science Teaching, Evaluation and Research) is a unique NSF funded university-museum partnership designed to provide practical teaching experiences for pre-service teachers in New York City. CLUSTER is a formal/ informal partnership between The New York Hall of Science, City College and CUNY Graduate Center provides undergraduate science majors part-time work as exhibit interpreters at the New York Hall of Science and a stipend for education courses at City College leading toward secondary science certification. Olsen, Cox-Peterson, and McComas (2001) speak to the benefits of including museums in teacher preparation. But typically, the informal component of teacher preparation includes site visits, workshops (Melber, 2005), or internships (Abell, 2006). CLUSTER is the first program to design a multi-year, pre-service teacher training program set primarily in an informal science education environment, resulting in secondary science certification. The program provides two years of practical hands-on teaching experience with science exhibits and workshops, extensive training, and opportunities for self-reflection. The courses, co-taught by City College faculty and museum staff, connect interpretive experience to classroom pedagogy and theory. A longitudinal and comparative research study will examine and document how the program can effectively build a new, diverse, and more effective supply of urban science teachers. Outcomes for the project include preparing a significant number of new science teachers who represent the diverse communities of New York, developing a sustainable university- museum partnership, and creating an effective model for recruiting and training the next generation of science teachers.

References

- Abell, S. (2006). Challenges and opportunities for field experience in elementary science teacher preparation. In K. Appleton (Ed.), *Elementary Science Teacher Preparation*. New Jersey: Erlbaum Press.
- Hartley D., & Whitehead M. (2002). *Teacher education: Major themes in education*. Routledge, NY.
- Melber, L. M. (2005). Teacher professional development and informal learning environments: Investigating partnerships and possibilities. *Journal of Science Teacher Preparation*, 16(2), 103-120.

- Olsen, J. K., Cox-Peterson, A., & McComas, W. F. (2001). The Inclusion of informal environments in science teacher preparation. *Journal of Science Teacher Preparation*, 12(13), 151-173.
- Wilson, Floden, & Ferrini-Mundy. (2002). Teacher preparation research: An insiders view from the outside. *Journal of Teacher Education*, 53(3), 190-204.

Comparing the Effects of Online Testing vs. Paper Testing in the Classroom

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Abstract: Currently, several educational platforms exist for delivering course content and assessment, such as Blackboard, WebCT, etc. These Internet delivery methods have led to distance-learning courses completely taught outside the traditional classroom, as well as a variety of hybrid classroom methods. Among the most conservative hybrid methods is a traditional classroom where students complete tests via the Internet. The present study compares the effect of computerized testing versus paper-and-pencil testing in a college course setting. Several aspects of the setting are notable: the college is a women's college; all students receive laptops upon matriculation; the entire campus has wireless access to the internet; and the study is embedded as part of routine course testing. All of these factors should act to increase familiarity and confidence among the women taking part in the study. However, after two of the first five quizzes, students routinely complained about computerized testing, single item viewing, and inability to backtrack. The students requested paper-and-pencil tests. As a result, we agreed to run a comparison study. A total of 41 students across 2 sections participated in testing on the given day. The procedures were explained to students each day in class for the week prior to the day of the test. Two 16-item forms of the test were developed. Each student completed both forms of the test during the same 50-minute session. All students completed a computerized test of the first form, showing all questions, making the backtracking issue moot. Computer testing was followed by paper-and-pencil testing. Half of each class was randomly assigned to receive each form via computer and via paper. Test scores were analyzed with a 3-way Analysis of Variance (Mode of Testing X Form X Section) with repeated measures on the first two factors. The second section outperformed the first section $F(1, 37) = 9.801, p = .003$. This is further analyzed in terms of class composition. More importantly, there was an overall effect of test mode $F(1, 37) 8.617, p = .006$, with students performing better on the paper-and-pencil test $M = 25.76 (s.d. = 7.50)$ than on the computerized test $M = 23.05 (s.d. = 8.26)$. Discussion focuses on additional issues such as the role of supervision, and closed-book vs. open-book testing.

Creating a 'Second Life' in the Classroom to Engage 21st Century Learners

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Abstract: Virtual worlds offer a rich, interactive, immersive environment in which participants can experience learning in ways not possible five years ago. The educational community has become a leader in proving the value of virtual worlds, especially Second Life (SL), which was created by Linden Labs in 1999. Foss (2009) points out that virtual worlds and the ability they provide for simulations offer participants three distinct advantages: the opportunity to engage in a simulated experience that otherwise might be too expensive in the real world; activities that include collaborative experiences; and experiences that could be potentially dangerous in real world scenarios. Further, Ondrejka (2008) cites that SL allows participants to go beyond what the real world allows in terms of physical and geographic constraints and that "this mix of fantastic possibilities and social education opportunities has virtual worlds poised to transform basic approaches to learning and communication, as well as innovation and entrepreneurship" (p. 229). Borgman et al. also advocate that in order to cultivate a generation of citizens that are technologically savvy, higher education institutions must work to attract talent that can effectively utilize the tools of this field, in what they term "cyberlearning," including individuals from industry and education (2008, p. 22). In

2008, Larry Myatt proposed “schools must walk away from text-driven instruction and embrace developing technologies if they hope to stem the loss of students” (p. 186). We depict an asynchronous instructional learning module (created utilizing Google Sites) targeted at introducing university students to the virtual world, Second Life. The following objectives were incorporated into the module. The student will be able to describe SL and identify two educational applications of the software; to download, install, and create an avatar in SL; to sign-on to SL; to demonstrate editing their SL avatar; to execute basic movements with their SL avatar; and to utilize the SL search engine to teleport to islands of interest. The module concludes with the students being assessed on their ability to teleport to an island of interest in Second Life and then reflecting upon their experience in a course wiki. Students then evaluated the overall module by submitting an online survey. Following an analysis of the literature dealing with Second Life, there appear to be several benefits to involving university students with virtual worlds and specifically, Second Life. These benefits include: the opportunity to utilize an emerging digital technology; the chance to collaborate with other professors, experts or students in-world that might not otherwise be possible; the opportunity to engage in discipline-specific role- playing or simulations; and synchronous opportunities for those students enrolled in online courses.

References

- Borgman, C. L., Adelson, H., Dirks, L., Johnson, R., Kloedlinger, K. R., Linn, M. C., et al. (2008). *Fostering learning in the networked world: The cyberlearning opportunity and challenge. A 21st Century Agenda for the National Science Foundation Report of the NSF Task Force on Cyberlearning*. Washington DC: National Science Foundation.
- Foss, J. (2009). Lessons from learning in virtual environments. *British Journal of Educational Technology*, 40(3), 556-560.
- Myatt, L. (2008) Connecting the dots: The unexplored promise of visual literacy in American classrooms. *Phi Delta Kappan*, 90(3), 186-189.
- Ondrejka, C. (2008). *The ecology of games: Connecting youth, games, and learning* (K. Salen). Cambridge: The MIT Press.

Curriculum Mapping and Design Process: Tools That Helped Develop a Holistic Departmental Curriculum While Preserving the Integrity of Three Separate Concentrations

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Abstract: Curriculum mapping and creative problem solving processes were combined to develop a complex product. In the fall of 2008, a Department within a four-year accredited University determined the need to revise the curriculum within two of the three concentration offerings. The department determined in order to develop a holistic curriculum that addressed students’ outcomes and learning objectives, a model for curriculum development needed to be utilized with the idea of redesigning the entire curriculum for all three concentrations. The entire faculty participated in a curriculum mapping and problem solving exercises and developed a holistic vision for the future of the department. This department began with a strategic planning session that netted specific goals and objectives, one of which was to redesign the entire curriculum with several underlying principles to be considered: To strengthen the core competencies in design across all concentrations To add opportunities for interdisciplinary interactions To preserve the integrity of separate concentrations To align the curriculum with the University’s strategic plan To address the six areas of graduate readiness as outlined by the Partnership for 21st Century Skills into the curriculum To revisit Boyer’s model of Undergraduate Education. In addition, this meant, “that many

traditional facets of “the academy” needed to be re-envisioned to accommodate the changing global culture. In addition to re-envisioning and redefining new literacy, new models of instructional design, new methods for delivering instruction, and new learning spaces needed be conceived and developed in order to support the 21st Century learner-centered classroom.” The purpose of this practice session is to discuss and demonstrate how curriculum mapping and creative problem solving methods can serve as the impetus for developing a curricular dialogue; a dialogue that can identify curricular gaps and overlaps in a non-threatening way. At the end of this session, participants will be able to understand and implement curricular mapping and creative problem solving techniques for their own curricular assessment and development.

**The “Death” of Disciplines:
Development of a Team-Taught Course to Provide an Interdisciplinary Perspective for First-Year Students**

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Abstract: In his 1959 lecture “The Two Cultures,” C.P. Snow (1998) lamented that one half of the intellectual community did not read Dickens, while the other half could not define the Second Law of Thermodynamics. In the intervening half-century, disciplinary separatism has failed to disappear. Negative effects from this intellectual isolationism have extended down into the sphere of undergraduate education, including a failure to achieve intellectual coherence within most university curricula which may result in uneven or fragmented personal epistemologies amongst graduates. Although interdisciplinary efforts in teaching and research have been promoted as a possible antidote and discussed at length in the academic community, evaluations of interdisciplinary efforts in the classroom are less frequently documented. In particular, interdisciplinary teaching collaborations across the traditional science-humanities boundary, though frequently extolled in concept, appear rare in execution or rarely discussed. This poster describes the development, execution, and results of a unique effort in interdisciplinary teaching at the University of North Carolina. Four doctoral candidates from widely varying home disciplines (Environmental Engineering, Genetics, Religious Studies, Slavic Languages and Literatures) collaborated to create and teach a “truly interdisciplinary” course for first year students. The resultant course, “Cheating Death”, was centered around the pervasiveness of humanity’s quest for immortality and the potential effects of this central motivation on human decisions. Rather than divide the course into a patchwork of loosely connected modules taught by each instructor in sequence, every class meeting was team-taught by all four instructors. Themes such as heroism, monuments, and identity were continuously emphasized and woven through the class to create a backbone supporting the investigation of connections into many different disciplinary-based concepts of immortality. Course activities were appropriately diverse, including debates, field trips (genetics lab, campus graveyard), weekly written reflections, and a final team project. Course success was evaluated based on first and last day anonymous classroom opinion polls and analysis of students’ final reflective essays on immortality and the interdisciplinary experience. Opinion poll comparisons indicated a perceptible move beyond considerations of the physical self to the self’s impact on the greater community, perhaps indicating a more mature world view. Essays repeatedly emphasized appreciation both of the interdisciplinary course structure itself, and the particular knowledge gained through collaborations with peers from different intended disciplines. The course experience in general appeared to be incredibly positive, and suggests that both freshman-level and graduate students can benefit from interdisciplinary classroom experiences. We offer this particular experience as a potential framework for interdisciplinary efforts at other universities, and hope to generate relevant discussion such as: what is interdisciplinarity; what are the advantages and disadvantages of an interdisciplinary team-based approach in course development; is this approach more suited for specific topics; how can instructors design courses that foster interdisciplinary thinking; how can instructors successfully bridge the science-humanities divide; and how can instructors and students work together to create a fruitful and challenging intellectual atmosphere in the classroom?

Ensemble: Enriching Communities and Collections to Support Education in Computing

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Abstract: Community plays a great role in the education domain. Research has shown that the quality of teaching greatly depends on the social and cultural norms and policies of an education community (McLaughlin, 1992). Intellectual and professional development depends on the collaboration of members within such communities (Adajian, 1996). Online communities involving teachers, students and researchers are using digital libraries to improve their teaching and learning experiences (<http://www.dlese.org>). JISC is a UK based program that is inspiring the innovative use of digital library technologies for education and research (<http://www.jisc.ac.uk/oer>). Similar to these projects, Ensemble, a pathway project of the National Science Digital Library (<http://nsdl.org/>), was launched to support the needs of educators covering any aspect of Computing. It has a distributed portal that links computing communities and provides a base for development of K-12 or college programs related to computing. Ensemble also collects and stores metadata from these communities and provides a set of digital library tools to support use and reuse of the material at different levels of granularity (e.g., from a short excerpt or figure, to an assignment, to a course). Other services include searching, browsing, tagging, and commenting. Currently Ensemble is using the Drupal content management system and the 5S framework, a digital library model composed of Streams, Structures, Spaces, Scenarios and Societies (<http://www.dlib.vt.edu/projects/5S-Model/>). In the stream model, we cooperate with partner sites to extract Dublin Core metadata from text, image, and video content and provide a service for NSDL to harvest from our selected collections. In the spaces model, we tailor metadata to each collection so its browsing and rendering reflect community practices. In the structures model, we build a discipline-wide ontology to support browsing and exploring our collections and communities' content. Users can browse Computer Science syllabi by Computing Curricula 2001 and they can explore the Ensemble communities' content by tags. We represent harvested collections based on different collections' characteristics. In the scenarios model, we provide access through various environments, so users can find information where they are accustomed to spend time. In the societies model, we partner with groups representing education groups in different sub-disciplines. We also integrate social networking services, such as Facebook and Twitter, to connect people with similar interests. We plan to extend these capabilities further with new software from partner research projects. For example, we will use an ontology to aid browsing, and to aid those in one sub-community to make use of resources developed by another sub-community. The alpha version of Ensemble was launched November 17, 2009. We are collecting user activity data through Google Analytics and our own tools. The NSDL Pathways projects highlight various STEM areas. Ensemble, the computing pathway, will support the full range of computing education communities, provide a base for the development of programs that blend computing with other STEM areas, and demonstrate digital library innovations that can be propagated to other NSDL pathways.

References

- Adajian, L. B. (1996). Professional communities: Teachers supporting teachers. *The Mathematics Teacher*, 89(4), 321-324.
- McLaughlin, M. W. (1992). How district communities do and do not foster teacher pride. *Educational Leadership*, 50(1), 33-35.

Ensuring Academic Continuity During Emergencies

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Abstract: One of the working groups participating in a conference concerning academic continuity at institutions of higher education during periods of crisis, participants were in agreement that “the continuity of teaching and learning, in particular, is not usually on the emergency management radar screen, despite the fact that this is the ‘core business’ of higher education.” According to the definition provided by the Sloan Consortium, academic continuity is a process that serves to sustain and maintain teaching and learning during a crisis situation, whether a natural disaster, a man-made disaster, or some precipitating factor. When considered in a more holistic manner, academic continuity is essential to maintaining the overall resiliency of an institution. In this context, the concept of resiliency is derived from the business model and relates to the capacity of an institution to prepare for, endure, and recover from any major emergency event that threatens or disrupts normal operations. Because teaching and learning do indeed comprise the core mission of any college or university, supporting that mission in a time of crisis is critical to the institution and to the students who are pursuing educational and career goals within a time-focused schedule. Using a model developed by Farleigh Dickinson University, Radford University has created a web-based resource that is accessible to faculty as a means of providing access to instructional tools, regardless of the level or understanding and skills they possess with regard to the use of technology. FDU has rightfully garnered praise and recognition throughout the higher education community and from agencies and organizations involved in emergency management in higher education for the work related to implementing strategies and resources to enhance the continuity of academic programs and services during emergency situations at institutions of higher education. Further, the model is designed in a manner which facilitates customization as appropriate to the unique academic mission of any university. Continuing in the spirit of the work completed by FDU, anyone who adheres to the guidelines established by the Creative Commons Attribution Share-Alike Non-Commercial License version 3.0 is free to use, edit, and redistribute the content on the Radford University site consistent with specific provisions.

Examination of Student Responses to a Nontraditional Liberal Education Course

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Abstract: ALS 1004 “Agriculture, the Arts, and Society” was developed specifically for the Creative and Aesthetic Experience area (Area 6) of the Curriculum for Liberal Education (CLE). Since 1996, the course has grown from a small (n=28) class of agriculture majors to one that routinely fills to capacity (n>100) with students representing a variety of majors. In the Spring of 2008, 79 of 124 students were majoring outside Agriculture and Life Sciences. A one-credit, pass-fail course, ALS 1004 encourages active student participation through in-class projects (sketching, visits to the horticulture garden, and reflective writing of art samples) and small-group discussion, as well as an experiential photography project that directly engages students in the creative process. This research project was designed to gain insight into student learning by triangulating findings from focus groups of former students with course evaluations and student responses to the final essay question. This study was conducted to address the following goals: determine how students perceive that the in-class exercises influence their learning experience in this course, determine how students perceive that the out-of-class assignments influence their learning experience in this course, triangulate these findings with course evaluations and student responses to the final essay question that requires students to reflect on their learning experience. This project involved the collaboration between the Animal and Poultry Sciences faculty member responsible for teaching the ALS 1004 course and a faculty member from Agriculture and Extension Education who has expertise in teaching pedagogy and qualitative research methods. An important strategy in the success of such research projects was the use of co-principle investigators’, each with experience in different research methods to make sure both the qualitative and quantitative activities are included. In this study, the researchers used multiple data sources including the existing course evaluation surveys from 2002 –

2008, existing written responses to the final essay question, and a set of focus groups to allow for triangulation between the multiple data sources. This project utilized focus group methodology for the in-depth, qualitative exploration of the phenomenon of student learning experiences in the ALS 1004 course. The focus groups allowed for a rich conversation about the course experiences where individuals can build upon one another's ideas. Each of the focus groups was audio-recorded to complement the field notes and observations gathered during the group sessions. The recordings have been transcribed by a graduate student and are being analyzed by both researchers using the inductive method. After preliminary analysis the researchers will conduct a final focus group at the beginning of the spring 2010 semester with 7 – 9 students from the original two focus group sessions. This final focus group will provide the researchers with an opportunity to seek the students' reactions to the categories developed in the preliminary analysis of the course surveys, final exam responses, and focus group discussions. This poster presentation includes the preliminary findings and recommendations.

Global Health Leadership Fellowship

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Abstract: We present an overview of the VCOM Global Health Leadership Fellowship Program, including a summary of the history and background, a discussion of program methodology, a brief description of research completed by eight PhD candidates who graduated from the program in June 2009, and demonstration of program effectiveness in training for global health leadership. We highlight the educational interventions graduate students completed following their research as part of the fellowship requirement. Featured research titles include: Nutrition Knowledge of Honduran Caretakers and Dietary Change of their Children; Assessing the Effects of National HIV/AIDS Education Efforts Among 15-39 Year Olds and Health Care Workers Applying the Health Belief Model in Six Cities in Sonsonante, El Salvador; Quantifying Structural Changes with the Application of Osteopathic Manual Medicine (OMM) in Tegucigalpa, Honduras; Relationship of Osteopathic Manipulative Treatment During Labor and Delivery on Selected Maternal Morbidity Outcomes: A Randomized Controlled Trial; The Use of Osteopathic Manipulation in a Clinic and Home Setting to Address Pulmonary Distress as related to Asthma in Southwest Virginia; Achievement of Developmental Milestones among Salvadoran Orphans; Telesonography Adoption and Use to Improve the Standard of Patient Care within a Dominican Community; and The Verón Community Scabies Education and Eradication Program. The Global Health Leadership Fellowship Program poster includes a brief description of each completed research program and context of the project within the objective of global health leadership development training. Outcomes and lessons learned during the fellowship program will provide guidance for similar future international research and education.

Global Seminar on Rural Sustainability: Problem-Centred Learning in a Cross-Cultural Setting

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Abstract: Global Seminar is an internet-based, student-centered learning approach that includes text and real-time video discussions via Internet conferencing among students at collaborating institutions in North and South America. Global Seminar is also a learning community comprised of students and faculty from various countries who study key global issues of sustainability pertaining to agriculture, aquaculture and food systems. The goal of the Global Seminar is to prepare future leaders and citizens of the global community to articulate policy agendas that

will lead to a sustainable environment and a stable food supply. Students focus on environmental sustainability issues, and learning strategies encourage them to articulate their decision-making process as they adopt different roles in the local and/or global community. Too often in the regular theory-based lecture instructional method, students sit passively and are not challenged to form and voice their own perspectives. This problem-centered learning approach allows the educators to develop the case studies, provide some background resources and create a series of directional questions/comments. Students study current literature and global commentaries, prepare to debate the issues, and draw conclusions and make recommendations. Since they participate in live-discussion with students of other international institutes, the onus is on them to present and support their viewpoints from a globally sustainable perspective. As a future employee, this translates to the decision-making process that will guide their actions and recommendations to their local or global community, government or industry agencies.

"Glocal" Partnerships for Student Engagement

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Abstract: In recent years, Virginia Tech has begun to address the need to integrate internationalization into the university mission and vision statements by drafting an International Strategic Plan that emphasizes the need for curricular change. The plan demonstrates that the University recognizes globalization trends, such as the increase in global trade; demographic changes within our own borders; and a critical claim that globalization includes ideas and values. Making changes in curricula often involves a culture shift, a willingness to try new strategies involving partnerships with individuals, groups, and organizations beyond the walls of the university. This work illustrates one such strategy along with a rationale for integrating local community partnerships into program design. By focusing on a case study of the Pilot Street Project, a project founded to fill a critical gap in services to high-need refugee newcomers from predominantly east African nations, the poster will describe benefits of building partnerships with local organizations to address difficulties immigrants and their families face. These local partnerships, often the result or extension of service-learning courses, bring people from many cultures together and help people find a sense of place. Thus, the global and local join to become "glocal." In addition, the poster outlines principles guiding the development of this partnership along with some of its challenges, to include the issue of sustainability. Finally, the poster will highlight how this partnership addresses one goal of Virginia Tech's International Strategic Plan, that of students becoming familiar "with the world beyond the United States, [learning] skills, . . . [and] interacting with people from other cultures" (p. 1) by focusing on the values of "cross-cultural understanding," "critical reflection," and "rigorous engagement in the learning process" (p. 2). In so doing, students learn to seek out understandings from multiple perspectives and outreach becomes in reach.

Grief-Related Expressive Writing in a Stress Management Course

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Abstract: A proportion of college students experienced the loss of someone close to them. However, the most widely used stress management textbooks on college campuses give scant, if any, attention to grief issues. This is surprising since college-age individuals may be particularly at risk for certain negative outcomes following bereavement. Thus, inclusion of grief related experiential exercises (e.g., poetry) may seem particularly warranted in college courses such as Stress and its Management. However, caution is called for in assigning expressive grief assignments in the classroom. We have advocated elsewhere for a scholarly approach to the use of stress management experiential exercises in the classroom. This is particularly salient with grief issues where these types of exercises are not universally helpful and may be detrimental. The present project explores the helpfulness of

expressive grief writing exercises in the context of a Stress and its Management Course. Undergraduate students (n=225) enrolled in a Stress Management course were given the opportunity to complete several expressive writing assignments for extra-credit. Eighty students completed a writing assignment. Of these, 35 students have completed an ongoing end-of-semester feedback survey regarding the usefulness of these exercises. (M age = 22; 79% female; 38% Caucasian, 38% African American). Participants had experienced either the death of a loved one (50%) or a loss not due to death (50%). Students reported on losses that were moderately stressful to the most stressful experience up to that point in their lives (80%). Overall, students felt that the expressive writing task was both an evocative and a positive experience. Approximately 73% of the students sampled agreed or strongly agreed that they experienced strong emotions related to their loss when completing the writing exercise, and 85% agreed or strongly agreed that completing the writing exercises caused them to “relive memories of the loss experience.” Over half of participants reported that the exercises helped them to make sense of their loss experience (62% agree or strongly agree) and a majority reported that writing encouraged them to “remember the good times” that they had with the person whom they lost (76% agree or strongly agree). Importantly, 88% agreed or strongly agreed that the exercise was helpful (12% neither agreed nor disagreed). Importantly, participants who experienced the death of a loved one found expressive writing more helpful (M = 4.35) in encouraging them to remember the good times with the person whom they lost than did students who experienced a loss not due to death (M = 3.41) $t(32) = 3.04, p < .01$. These results suggest that grief-related expressive writing can be beneficial positive experiences for students who have suffered a significant loss, even the loss of a close relationship by death. These types of exercises may provide a valuable learning tool, enabling students to develop stress-management tools needed to respond to a variety of losses. These results may be specific to the types of writing assignments offered.

Hands-On Distance-Learning Laboratory Course Using Internet Video Tools

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Justeen Olinger

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Abstract: Since 2005, the Virginia Tech Department of Electrical and Computer Engineering has required a circuits laboratory course to accompany the circuits lecture course in its BSEE and BSCpE curricula. The laboratory course is the first opportunity for most of our sophomore students to design, construct, and characterize electrical circuits. A unique feature of this course is that the students conduct much of their work using set of equipment, known as Lab-in-a-Box (LiaB), outside of a traditional classroom environment. The LiaB kit contains an analog/digital trainer, a digital multimeter, various electrical components, LEDs and several operational amplifiers. A software oscilloscope on the student’s personal computer with an inexpensive sound card is used to measure time-varying signals. We realized that the hands-on component of our circuits laboratory course does not need to be constrained to on-campus students because of the flexible platform offered by LiaB. Therefore, we decided to develop a distance learning hands-on laboratory course to address the needs of in-coming transfer students as well as students currently in our program. The need for ‘face-to-face’ communication was immediately identified as a key component to the success of the laboratory course. Most students presently enrolled in the on-campus course are not familiar with electrical measurements, circuit construction techniques, and debugging methodologies and this lack of experience will likely be replicated in the off-campus students. Hence, one-on-one communication with course instructor or graduate teaching assistant (GTA) provides real-time support with concrete demonstrations to these students. Furthermore, we decided to maintain an element of the current on-campus course, where each student must demonstrate some aspect of the circuit’s operation to the GTA at the end of each laboratory experiment. We evaluated three software packages that can be used to facilitate interactions between the instructor or GTA and off-campus students. The programs were Saba Centra, currently used at Virginia Tech for our distance learning courses;

Adobe Connect Pro, a web conferencing and eLearning software package; and Skype, a voice- and video-over-internet program. While Adobe Connect Pro offered the most complete platform of the three programs evaluate, the quality of the video and voice transmission achieved using Skype was equal in performance and was the less expensive option. We tested two video capture devices – the built-in webcam on an Apple Macbook Pro and the Logitech QuickCam Pro 9000. The flexibility of the external video camera was found to be needed to easily collect images of the circuit on the breadboard and video of the student performing measurements using the digital multimeter or oscilloscope. The course development is in its final stages and the distance learning hands-on circuits laboratory course using these tools will be offered in Summer 2010.

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Higher Education: the Next Generation

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Abstract: This article presents an argument for a strategic paradigm shift in the fundamental approach to higher education, really the first change in organizational structure since the founding of Harvard in 1636. The confluence of four fundamental factors brings the need for change to the forefront, creating a perfect storm that threatens to alter the classroom model of instruction for the foreseeable future. First, the role of technology continues to expand in importance but, more importantly, has also begun to make fundamental changes in the way people manage information. Second, innovations in data transfer have made it possible for corporate for-profit institutions to take an increasingly bigger piece of the educational market share. Third, a deepening recession has caused academic administrators to re-evaluate costs associated with instruction, caused significant cuts in academic offerings a publicly supported institutions, and opened opportunities for inherently more efficient corporate models of instruction to emerge and thrive. Finally, fewer job opportunities have made students demand a stronger connection between education training and job competitiveness. This article supports the premise offered by Frank Donoghue in his book about the corporatization of higher education “The Last Professors” that for-profit corporations are transforming the college instruction market. However, while Donoghue sees the elimination of humanities courses (as well as those in the arts) in exchange for a corporate-minded vocational technical educational system, this paper suggests an alternate view of how higher education institutions might react to technological changes and an increasing sense, on the part of students, that education should prepare them solely for a job in the workplace. It focuses on the following actions: 1. Create and accredit a locus of foundational general education courses taught using distributive learning techniques and administered through a consortium of non-profit institutions of higher learning using existing accrediting bodies, such as the Southern Association of Colleges and Schools (SACS). After completing a two-year foundational curriculum, students would spend quality time in small groups with the best practitioners in their field at virtually every existing institute of higher learning. A national instructional design consortium for foundational courses could be staffed by faculty from respected institutions around the country. The creation of a central clearing house for digital content, course development and course distribution managed by universities would permit establish national standards for foundational on-line courses. 2. Re-structure the Masters level of graduate education as a one or two-year extension of the previously described undergraduate education. After completing two years of foundational on-line instruction, students would spend two additional years working with faculty in areas of highly specialized content in small classes at their chosen university campus. University campuses would lose some of the responsibility for developing social skills. No doubt, the social conventions of any culture must be nurtured and developed. At the present time, most university campuses employ a large staff which ensures that the student experience includes culture, exercise, and entertainment for their constituent populations. Perhaps, the development of these skills would become more compressed in a two-year campus residency. Instructional technology offers exciting new opportunities for student engagement and learning. The new technologies have changed the instructional frontier dramatically. Our expectations have changed. The world has changed. After 400 years, the existing institutional model has served us well. We should now consider whether it is time to change it as well.

Integrating Technology Effectively: An Electronic Performance Support System for Teachers

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Abstract: Though technology promises to effect broad changes in teaching and education, actual results have been weak or inconclusive at best. Even when teachers overcome significant institutional hurdles and take advantage of technology to enhance their teaching, costs, insufficient training and support, and rapidly evolving tools contribute to the erosion of confidence causing teachers to, at best, only sustain existing practices. We identify the problem as lack of an integrated educational software design process and look to performance-centered design, a highly successful design paradigm in the business world, as a possible solution to the dilemma of technology integration in teaching. Electronic Performance Support Systems (performance-based tools that take advantage of electronic technology) abound in the highly networked world of business and research. These are tools that are designed around individual users and/or specific tasks. They reduce the cost of training by providing support in context and on time, designing for day-one productivity, and leveraging the user's own knowledge-base to streamline and improve performance. EPSS represents a shift in thinking from dependence on training manuals, help-desks, and rote instruction to on-task learning and user configuration to improve the task environment. However, the new paradigm has scarcely been applied to educational technology design. Administrative applications, as can be expected, have benefited from these advantages. Students, too, (as web users) have had access to highly individualized interfaces found in web-based applications (especially since the advent of Web 2.0 designs). But applications that are specifically designed for education and used in typical classroom contexts have, by and large, continued to be cobbled from re-purposed software originally designed with business, research, or the web consumer in mind. The result has been lack-luster progress in the majority of teaching and technology integration projects and the potential for seriously damaging the credibility and technical confidence of many teachers. Gloria Gerry explains EPSS as a concept that "can be operationalized in many and diverse ways, but the common denominator that differentiates [it] from other types of systems or interactive resources is the degree to which it integrates information, tools, and methodology for the user" (34). This poster session showcases E-folio, a teacher-centered course management system premised on the principles of EPSS. E-folio has configurable labels and help files to control information flow; a minimized set of online tools to provide consistency between text-based communication, document creation, and image and audio/video management; and a portfolio-based method of teaching and assessment that provides an overarching pedagogical framework. The most significant feature of E-folio, however, is its focus on the teacher as the center of the design objective. E-folio has been used intensively in three courses at the University of Virginia over the last ten years. The accumulated record is a useful study of not only student work, but also what "course portfolios" might look like over time. E-folio serves as proof of concept for the efficacy of EPSS in educational technology design.

References

- Belanoff, P., & M. Dickson, Eds. (1991). *Portfolios: Process and product*. Portsmouth, NH: Boynton/Cook.
- Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, MA: Harvard University Press.
- Gery, G. (1991). *Electronic performance support systems: How and why to remake the workplace through the strategic application of technology*.
- Raybould, B. (1995). Performance support engineering: An emerging development methodology for enabling organizational learning. *Performance Improvement Quarterly: Special Issue on Electronic Performance Support Systems*, 8(1).
- Stevens, G. H., & Stevens, E. F. (1996). *Designing electronic performance support tools: improving workplace performance with hypertext, hypermedia, and multimedia*. Englewood Cliffs, NJ: Educational Technology Publications.
- Stolovitch, H. D., & Keeps, E. J. (1992). What is human performance technology? In H. D. Stolovitch & E. J. Keeps (Eds.), *Handbook of Human Performance Technology: A Comprehensive Guide for Analyzing and Solving Performance Problems in Organizations* (pp. 3-13). San Francisco: Jossey-Bass.

Integration of Service Learning throughout a Department's Curriculum

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Abstract: Higher education has enthusiastically adopted the concept and practice of campus-based civic engagement. Virginia Tech is a member of Campus Compact, a national coalition of more than 1,100 college and university presidents (representing over six million students), that is dedicated to promoting service, civic engagement, and service-learning in higher education (<http://www.compact.org/>). Within Virginia Tech, the Center for Student Engagement & Community Partnerships (CSECP) called for proposals for a \$10,000 award to a department or college that “best represents a coherent and innovative plan for developing infrastructure and enacting the curricular reform to realize engagement goals.” The Department of Horticulture won that award in 2009, and has developed a plan to integrate service learning activities in most of its courses. A key to winning this award was the incorporation of e-portfolios into the plan. All Horticulture students will be trained to use E-portfolios so that they will systematically record and track service-learning projects as well as academic work. The Department of Horticulture’s plan is to incorporate an integrated system for all Horticulture majors, from entry to graduation, to participate in highly experiential Service Learning projects. The goal is to enhance the community, value community-based-learning, promote lifelong service and learning, and reward collaboration both within and beyond the Department. Faculty will integrate Service Learning into most undergraduate courses (approximately 15; at least one designated as Service Learning) as well as Horticulture Garden and club activities. Hence, faculty culture will be transformed so that threads of Service Learning concepts are woven throughout the curriculum. A clear protocol will ensure projects are sound, effectively enacted, and evaluated upon completion. Following a detailed rubric, students will compose an e-portfolio synthesizing course projects and service learning activities at Virginia Tech. Portfolios will be presented in a capstone course; students will describe their projects, the progression of understanding, and improvements in knowledge and skills. Full implementation of the plan will be achieved by the spring semester of 2012. Successes and lessons learned from the first semester of the plan’s implementation will be described.

Interdisciplinary by Design: Fostering Critical Thinking through Library Instruction

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University Libraries, Virginia Tech

Abstract: Which instructional strategies allow students to most effectively master the vast and mutable information landscape surrounding them? How can we best foster the critical thinking skills and creativity essential for traversing disciplinary boundaries and meeting increasingly diverse research needs? What role does the library—itsself an inherently interdisciplinary site for learning—play in these processes? We focus on the development of library-based instruction sessions for industrial design students at Virginia Tech. Much like the library, industrial design pledges no particular disciplinary allegiances: at its best, design research reaches within and across fields. The process of transforming idea into finished product is necessarily situated at the intersection of complex inquiries into user expectations, the exigencies of working materials, and the histories of art, science and technology. Creating successful and innovative design interactions thus entails not only a deep familiarity with different types of data, but also an awareness of the discipline-specific construction and dissemination of information. This work examines the task of meeting interdisciplinary research needs during library-based instruction sessions conducted with design students between 2008 and 2009. Addressing interdisciplinarity as both an instructional method and a pedagogical model, it illustrates multiple teaching strategies used to increase students’ insight into the multidimensional nature of their own research and the need to utilize the wide range of library resources at their disposal. These strategies include concept mapping, visual problem-solving, and user-centered narrativization. Through these basic exercises, students first explore the concept of interdisciplinarity as it emerges in contexts outside of, and seemingly unrelated

to, the academic research environment, as an intrinsic component of the various objects and activities of everyday life. Library resources representing multiple databases are then introduced within this expanded field of information. Finally, students engage in self-guided assignments that enable them to explore the multidisciplinary components of their individual projects. Within any given industrial design course, no two student ideas are alike. This poster addresses the research and teaching challenges posed by such diversity as it has been represented in the literature, and assesses the need for library instruction which focuses on critical thinking and interdisciplinary information literacy.

Know and Grow: Project-Based Learning in Ornamental Plant Production and Marketing

Holly Scoggins
Horticulture, Virginia Tech

Abstract: Ornamental Plant Production and Marketing (HORT 4614) is a senior-level course for those interested in nursery and greenhouse growing and marketing of annuals, perennials, and woody plants. Through the prerequisites courses, students are assumed to have knowledge of plant propagation, the effects of environmental factors, and other basic horticultural concepts. Concepts and principles are discussed in the lecture time of the course, and the lab is utilized for hands-on learning that builds on these concepts. Students select and grow their own ornamental plant crop to grow in a real-time, real-world project. Example crops include, hanging baskets, bedding plants, herbs, and rapidly growing woody crops such as bare-root roses and butterfly bush. Early in the semester, the student investigates the assigned crop. They are directed to industry resources such as technical support divisions, experienced growers, and extension materials for both development of production protocols and future problem solving. Plant propagules (seedlings or rooted cuttings) are received from commercial sources, and the student in charge of that particular crop directs the class on proper potting techniques. The care of the crop then becomes the responsibility of the student during the workweek, with the exception of weekend watering. The project also demands an understanding of the diagnostic process for disorders incited by environmental, disease, or nutrition problems, along with an appreciation for the limits of time and money when seeking solutions to a problem. Scouting for pests and pathogens to catch a potential problem early is important not only for the student's personal crop, but can impact the crops of classmates growing within that greenhouse; thus, a responsibility to the greater class. The crops are grown with the target market in mind: the end-of-the-semester Horticulture Club Spring Plant Sale. This creates additional incentive, as the student "contracts" with the club to deliver a certain number of plants at a pre-determined price point. Not all crops are successful. If the problem lies with the student's lack of knowledge or preparation, their grade is reduced accordingly. If crop failure occurs due to circumstances outside the control of the student (latent disease, heater malfunction, etc.) the student, though traumatized, is not penalized. As with any project-based learning experience, the successful transition to pro-active, fact-finding and implementation (as opposed to waiting for instructor-based commands) is critical to the success of the growing project.

Learning by YouTube: Experiences and Reflections from the Classroom

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Virginia Tech

Abstract: It has become increasingly common in Political Science courses to use videos as a pedagogical tool. One criticism of showing videos during class, however, is that videos lack any substantive interaction with the student audience. Even though videos can be used to spark a class discussion, the traditional pedagogical approach is still essentially top-down with the instructor/video conveying information in only one direction. Videos, though, may be used to foster active learning by putting students in charge of their learning. A learner-centered approach not only uses active teaching methods that promote discussion, but is also characterized by its belief in participants as

'learners' rather than 'students'. As a radical alternative to traditional teaching, this approach focuses on the 'learners' engaging in the production of knowledge rather than the 'experts' conveying knowledge to 'students'. In terms of videos in the classrooms, this approach requires the reversal of the roles of producers and audience, which has become popular outside academia with the explosion of viewer-created contents on video-sharing websites such as YouTube. In this study, students are given the opportunity to create an original research project in small groups culminating in a 5-minute video. Throughout the semester, students are required to submit multiple progress reports, which allow for constructive feedback. In conclusion, it is expected that students will gain a richer understanding of the topic of their research through a unique creative outlet.

Making Marks Meaningful through the "Laundry List"

Lara Golden
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Abstract: One of the greatest challenges in teaching writing courses lies within the to-mark or not-to-mark-student-writing debate: those instructors who make no (or few) marks oftentimes are left with frustrated students who believe the marks would be a form of feedback; other instructors who do mark student papers often find themselves in a perpetual stage of marking student writing and then, after returning marked papers to students, assisting students in understanding what corrections need to be made and how to make them. In the former cases, student aggravation amplifies with each paper responded to by an "unexplained" grade. In the latter cases, however, instructors become increasingly exhausted not merely by the time it takes to mark student papers and confer with them to clarify those marks, but these instructors also regularly lament that students simply do not internalize the necessary corrections. While a limited marking method may be successful for some students; the majority of students require more than checkmark or "x" feedback on their way to becoming "native speakers" (or writers) of academic-eze. In fact, students request it from us. Accordingly, through explicit feedback instructors can make implicit turns of academic writing clear to those who attempt to forge ahead in this foreign genre. But the greatest question lies here: How can writing instructors be certain that marks made on student writing are both understood and absorbed? The answer quite simply is "The Laundry List." While no tool is a magic bullet, the aim of the Laundry List is twofold: From a marked paper, students create a two-columned checklist: in the first column, students explain their errors; in the adjoining column, students show how that particular portion of their writing would be revised. This tool aims to bridge student papers to the perspective of the reader and back to the author again. Hence, several things can result from this list: The instructor can quickly verify that the student understands the comment and has been able to move forward to a successful revision of that portion of the text; furthermore, the student can utilize the list as a reference to improve the full original text as well as a checklist for future texts, especially if she discovers through this revision areas of her writing that had been particularly troublesome. Furthermore, this Laundry List becomes a metacognitive tool because it allows the student to monitor what she has learned; it allows the instructor to moderate student assessment of her own progress; and it provides a method for the instructor to model revision while providing real-time examples from the student's own writing.

A Methodology for Digital Library Educational Module Development and Continuous Improvements by the Community

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Abstract: The Digital Library Curriculum Development Project (<http://curric.dlib.vt.edu>) team has been developing educational modules and conducting field-tests internationally since January 2006. There had been two approaches for module development in the past. The first approach was that the project team members created draft modules

(total of 9) and then those modules were reviewed by the field experts as well as the other members. The second approach was that graduate student teams developed modules under the supervision of the instructor and the project team. Four members in each team collaborated for a single module with a total of four modules produced. The completed modules were posted in Wikiversity (http://en.wikiversity.org/wiki/Curriculum_on_Digital_Libraries) for wider distribution and collaborative improvements by the community. The entire list of modules in the Digital Library Educational Framework can also be found in that location. As our third approach, five graduate students in the Department of Computer Science at Virginia Tech have been developing Digital Library Educational modules (IR-related) throughout the CS 5604 Information Retrieval class in Fall 2009. Those modules are: 7-a:Image retrieval; 7-c:Recommender systems; 7-d:Routing, community filtering; 7-f(3-f):Crawling; 8-a: Preservation. Under the supervision of the project team and the course instructor, who is also in the project team, each student selected a module to work on and then began completing the sections individually. The complete list of sections in a module template can be found at <http://curric.dlib.vt.edu/modDev/Template.2008-10-03.pdf>. During the first half of the semester, the students focused on the module name, the scope of the module, learning objectives, 5S characteristics, relationships with other modules, prerequisite knowledge required, introductory remedial instructions, a list of topics for the body of knowledge, resources, additional useful links and the list of contributors. This was to produce overall structure of the modules. Comments and suggestions were provided by the project team following the students' midterm presentation of their draft modules. During the other half of the semester, students have been completing the details of the level of effort required, body of knowledge, exercises and learning activities, evaluation of learning objective achievements and glossary. Each module is reviewed by two other students in a non-overlapping way. Upon completion of those modules, they also will be posted to Wikiversity to ensure continuous improvements by the interested members of the community. Related Wikipedia articles will be linked to the modules to provide further details. We plan to invite field experts so that they could review the modules and leave comments. As shown in our previous module evaluation, this use of a wiki for evaluation will allow asynchronous communication among the evaluators. They can read other evaluators' comments for the same module and express their (dis)agreement on the wiki discussion page, as well as add their own comments.

Multimedia Tutorials on Lab-in-a-Box and PSpice

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Abstract: Few of our Virginia Tech Electrical and Computer Engineering sophomores have direct experience in electrical engineering, which appears to increase the difficulty that the students have with abstract concepts presented in electric circuits courses. To address these concerns, two lab courses were introduced early in our curriculum. The students perform experiments on their own outside the traditional classroom environment using a portable electronics kit (Lab-in-a-Box or LiaB), a multimeter, and a software oscilloscope. We observe that many of the students seek validation of their methodologies before completing the assigned experiment. In fact, some students do not submit their work for a grade because of their hesitancy to perform the experiment without a review of the intermediate steps by a perceived expert (a graduate assistant or faculty member). Demonstrations of the circuit simulations using PSpice, a software package used extensively in the field, during the circuits lecture course, the PSpice reference text, and the availability of graduate teaching assistants in an open laboratory environment known as the Computer Engineering Laboratory still do not provide adequate support for the students as they attempt to simulate the circuits prior to construction at home, usually late in night. An approach has been developed to provide students with 24-hour access to multimedia tutorials from a department website using readily available means for distribution, which include podcasts. Tutorials have been developed to address issues commonly encountered when using LiaB and the software oscilloscope as well as to cover select topics in PSpice. The advantage of podcasts over other distribution methods is that students can view the tutorials on their iPods while their computers are running the oscilloscope program, enabling real-time instructional support as they work on their labs. The podcasts are a mixture of still images and screen shots imported into a PowerPoint presentation with an audio track added. Currently, tutorials are available at <http://www.ece.vt.edu/tutorials/index.php> and are compatible

with three platforms: iPod nano, iPod Classic, and the iPod Touch. An explanation of the techniques applied during the development of the tutorials and a brief review of the current tutorials are provided.

Negotiating Collaboration and Concepts of Audience in the Writing Classroom

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Abstract: This poster will outline and describe the results of an assignment collaboratively designed by two first-year writing and technical writing instructors. In this assignment process, the instructors had two primary goals: one was to create an assignment that would bridge research in rhetoric/composition and technical writing, and another was to assign writing that would reach more authentic audiences for students. The assignment process in both courses heavily emphasized usability and collaboration, in line with a layered literacies approach that stresses incorporating rhetorical, social, technological, and other elements in classroom work. Working with new media as a subject of writing encourages students in both first-year writing and technical writing to become adept at composition, not just consumption, in multiple modalities. Knowledge of composing in digital environments and collaboration with peers are often highly valued as students advance into upper-division courses and the professional world. In the first iteration of this assignment, students in a junior-level technical writing course created collaboratively written instructions for a computer game based on their own testing and walk-throughs for that game. Students chose games with both educational and entertainment purposes: group members then took turns testing it, introducing usability concepts early in the writing process. Groups also began drafting instructions based on their work with the games: most used decentralized, asynchronous collaborative technologies such as Microsoft Word, but several worked with Google Docs (a centralized, synchronous collaborative technology). Each group's draft was workshopped and tested for usability twice with other groups, giving students more concrete concepts of audience. In the second iteration, students in ENGL1105 worked collaboratively to develop instructions for creative software (Photoshop, iWeb, GarageBand, etc.). Each group represented a range of familiarity and skill. Students were told that the instructions would be used by fellow classmates as well as future first-year writing students. Students chose their own objectives - introducing users to the most helpful tools, explaining the wide array of uses of the software, or instructing users on one specific task - and the most efficient way of accomplishing them. Instructions could incorporate a variety of media, including print documents, images, and audio/video. Each group presented their instructions for a usability test in which the class, including the instructor, attempted to follow the instructions. While the instructions assignment is common in technical writing classes, its variation for 1105 students became an introduction to technical communication. In both classes, however, students were challenged by the uses and limits of negotiating rhetorical goals within two competing contexts: collaboration with peers, and the affordances of the technology. There was no teacher-expert for the video games or the software and, as such, students emerged as experts, teaching one another.

Older Adult Technology Literacy and the Implications to Higher Education

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Abstract: Technology use among younger adults and school age children is ubiquitous. That technology is increasingly everywhere around us seems apparent. Less apparent, is today's technology use among older adults. The purpose of this study is to gain insight and understanding into these phenomena as they relate to older adults. This study addresses the following research questions: 1. What is technology use among older adults today? 2. What are its characteristics? 3. What are the implications to society and institutions of higher education? The use of technology can impact the lives of older adults in a positive way. However, some apparent factors influence older adults engagement with new technologies and the Internet. For example, older adults have fewer opportunities to be

exposed to, and to learn new technologies because of their age and work place opportunities. This study included five participants between the ages of 55 and 75. Each participant was interviewed over a period of 30-45 minutes addressing the use of technology in terms of, purpose, social connectedness, and technology mediums. Prior to the interview each participant was asked to complete a questionnaire consisting of 11 questions designed to address the aforementioned subject matter. Each interview transcript was encoded individually and then collectively. Three major themes emerged dealing with, efficacy, older versus newer technology, and social interaction. Based on our findings we conclude that it is dogmatic at best to measure older adults use of technology based upon age. From this small pool of participants, diversity of use is apparent as well as differing degrees of self-efficacy. All were interested in continuing education with respect to technology. Although each of the 5 participants were actively engaging technology at some level, 3 out of the 5 demonstrated relatively lower efficacy. Continued research is essential considering the fast pace at which technology changes and progresses.

Peer Mentors Implement And Sustain An Electronic Portfolio System

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Abstract: Peer-assisted learning models can facilitate the multidimensional aspects of learning that traditional or conventional mentoring seldom formally captures. Peer mentoring denotes reciprocity and equality between members which fosters a team relationship between members. The literature supports that students acknowledge a better understanding of complex assignments, especially technology-based projects when peer teaching is utilized. There are several ways in which peers can cultivate peer mentoring relationships that enhances learning. One modality to peer mentoring is a self-managed learning approach where a group of individuals (four or more) form a mentoring “set” or team. With assistance from a designated Team Advisor, a peer team actually formalizes goals, objectives and outcomes for various projects. Furthermore, the integration of undergraduate peer assistants or mentors to manage on-going, complex assignments such as an electronic portfolio (ePortfolio) can prove beneficial to both students and faculty. Therefore, we have adopted a course-based peer mentoring program to implement an ePortfolio that utilizes student peer liaisons which connects technology, curriculum, teaching & learning. The value of ePortfolios has become more recognized in higher education; however, its actual use is still evolving. A key benefit to maintaining an ePortfolio for the dietetics program is that it allows faculty to systematically collect and archive evidence and assess student learning outcomes required by accreditators. However, the creation of an ePortfolio can be intimidating and the process complex, especially to those with limited technological skills and computer literacy. Therefore, a unique component to the dietetics ePortfolio initiative was implementation of a peer mentoring-teaching model to assist students in the development of individual ePortfolios. A faculty guided student management team (SMT) comprised of seven dietetic students representing various academic levels, contributed to development of the ePortfolio system, powered by web-based assessment and portfolio matrices. Spring 2009, the SMT will introduce the ePortfolio system to sophomore dietetic students enrolled in Professional Dietetics using a peer instructional model. The student team has developed a hardcopy manual with step-by-step instructions, screen shots, and tips for use when constructing an ePortfolio. Using screen recording software, a tutorial video was developed with voice narration guiding the student through the process of constructing an ePortfolio. Fall 2009, the team developed weekly workshops with lesson plans aligned with the ePortfolio creation process, provided an email contact information for questions and to make one-on-one appointments, and held open office hours to further aid students in building their portfolio. The ePortfolio system represents an innovative approach for measurement of student learning that allows faculty to systematically compare assessment results overtime, recognize successes, and make necessary improvements in curriculum. The peer mentoring approach to ePortfolios engenders integrative learning whereby all students take ownership of their learning, cultivate reflective thinking, and advance their technology skills. Students also become more engaged learners when they gain opportunities to reflect and connect their academics to their professional development. Lastly, when faculty collaborate with students and actively involve them in the education process, they empower them to take ownership of their learning.

Perceptions of Group-Led Online Discussions: The Benefits of Cooperative Learning

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Abstract: Anecdotal and scholarly evidence exists to attest to students' general dislike of group activities in the classroom. One of the earliest investigations (Feichtner and Davis, 1984), found that students were dissatisfied with a variety of elements of group work ranging from how groups were formed to aspects of group processing. Most recently, Lizzio and Wilson (2005) found that student dissatisfaction with group work stems primarily from within-group processes such as equity and personal responsibility. Despite these generally unfavorable attitudes toward group work, there is a wealth of evidence attesting to its effectiveness, including increases in student participation and productivity (e.g., Carlsmith & Cooper, 2002), students' self-reported learning (e.g., Casteel, 2003), and students' actual learning (e.g., Perkins & Saris, 2001). The paradox is clear; students seem to dislike group work, yet evidence suggests that it is effective on a variety of different dimensions. The purpose of this investigation is to examine the relationship between satisfaction with elements of cooperative learning (positive interdependence, individual and group accountability, promotive interaction, interpersonal and small group skills, and group processing) and satisfaction with group work. Method Participants were 16 (one man, 15 women) students were randomly assigned to groups of two to three students. The primary goal of the activity was to have the groups generate a discussion question for the online discussion board and then lead the online discussion. The structure of the activity ensured that the five elements of cooperative learning (Johnson, et al., 1998) were included. At the end of the course, students were invited to complete an anonymous, online survey about their experiences with the activity. Several questions on the survey were designed to assess how satisfied students were with the five elements of cooperative learning. The remainder of the survey included questions about the effectiveness of the activity in meeting its goals, learning outcomes, satisfaction with the activity, and past experiences with groups. Results To assess the effectiveness of the group-led activity, single-sample t-tests were computed for each of the constructs, using the mid point of the scale (2.5) as the test value. The results of this analysis show that students report being satisfied with all of the elements of cooperative learning. The results also indicate that all of the elements of cooperative learning are positively and significantly correlated with satisfaction with the activity and past experiences with group work. Discussion The results of the study show that students reported satisfaction with all of the elements of cooperative learning. They also perceived that the activity was effective in achieving its goals, successful in meeting its stated learning outcomes, and provided a favorable group experience. These results attest to the importance of not only structuring group work so that it includes the elements of cooperative learning, but making efforts to ensure that students are satisfied with those elements.

References

- Carlsmith, K. M., & Cooper, J. (2002). A persuasive example of collaborative learning. *Teaching of Psychology, 29*, 132-135.
- Casteel, M. A. (2003). Teaching students to evaluate web information as they learn about psychological disorders. *Teaching of Psychology, 30*, 258-260.
- Feichtner, S. B., & Davis, E. A. (1984). Why some groups fail: A survey of students' experiences with learning groups. *Organizational Behavior Teaching Review, 9*, 58-73.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). *Active learning: Cooperation on the college classroom*. Edina, MN: Interaction Book Company.
- Lizzio, A., & Wilson, K. (2005). Self-managed learning groups in higher education: Students' perceptions of process and outcomes. *British Journal of Educational Psychology, 75*, 373-390.
- Perkins, D. V., & Saris, R. N. (2001). A "Jigsaw Classroom" technique for undergraduate statistics courses. *Teaching of Psychology, 28*, 111-113.

Programmatic Assessment: A Pretest-Posttest Design

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Abstract: Simply teaching facts and skills to students may be insufficient in our current educational climate; both parents and administrators often demand evaluations of our students' learning. Measuring learning requires two things. First, the assessment topic must be chosen. Secondly, the research design must be constructed to evaluate changes in student knowledge of information or skills. Defining Information Literacy and Fluency: Both the Southern Association of Colleges and Schools (SACS) and the State Council on Higher Education in Virginia (SCHEV) require that their member institutions demonstrate that students have gained facility in a variety of areas. We follow both organizations' lead by evaluating student learning of skills related to information literacy and fluency and ethical research. The State Council of Higher Education for Virginia has identified "six areas of knowledge and skills that cross the bounds of academic discipline, degree major, and institutional mission to comprise the basic competencies." These core competencies include Technology/Information Literacy (SCHEV Task Force on Assessment 2007, 3). Information literacy and fluency goals also directly relate to the standards propagated by the agency that accredits Virginia Tech. The Southern Association of Colleges and Schools (Commission on Colleges) Principles of Accreditation (2004) require that students can use technology tools (3.4.14), and require that students have instruction in information resources (3.8.2). Specifically, the Association of College and Research Libraries identifies five information literacy standards. The standards range from "Determining information Requirements" to "Locating information" to "Critical Evaluation" to "Ethical Researching" (ACRL 2006). The order of these standards roughly corresponds to the typical research project progression. Identifying Increased Knowledge: While pretest/posttest designs are commonly used in controlled experiments employing random assignment of treatments, the pretest/posttest approach has also been utilized in educational research. Although random assignment is not possible when students select their own courses, changes from the pretest to the posttest may be attributed to the course experience if proper controls are employed. Disciplinary studies have examined topics ranging from changes in factual knowledge about mental illness to the effectiveness of online versus on campus natural resources lab courses. Information literacy and fluency instruction has also been the subject of pretest/posttest studies. We describe a pilot information literacy and fluency skills assessment project utilizing a pretest/posttest design. This study differs from previous research through its emphasis on measuring changes in correct usage of skills. Positive changes in students' performance within each category of ACRL information fluency were identified through comparing pretest and posttest results. This study illustrates the potential for assessing changes in knowledge of research skills during a term.

Project LINC: Inclusive Design for Diverse Foreign Language Classrooms

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Abstract: The 2007 release of a report by the Modern Language Association, "Foreign Languages and Higher Education: New Structures for a Changed World," has focused renewed attention on foreign language instruction at the introductory level. Frequently, the report finds, these beginning courses are taught by part-time and untenured instructors, many of whom remain on the fringes of the department, with little access to ongoing support, pedagogical training, or faculty development. When students with sensory, cognitive or physical disabilities are introduced to this environment, the results can be frustrating for both the student (who may benefit from specific instructional strategies or accommodations) and the instructor (who may be ill-equipped to provide inclusive instruction). To address this problem, Project LINC (Learning in INclusive Classrooms), a three-year demonstration

project funded by the U.S. Department of Education (Office of Postsecondary Education), is developing a training curriculum to support new, part-time, and temporary foreign language instructors in inclusive classroom techniques. Grounded in research on foreign language pedagogy, and complemented with campus-specific focus groups, student interviews, and faculty workshops, Project LINC invites instructors to, in Virgil's words, "plow an unfamiliar patch." Our project embodies a social model of disability and an approach to instruction that seeks to raise faculty awareness of potential barriers to student learning and strategies for inclusive instruction.

Promoting Student Engagement through the Alternative CLE Earth Sustainability Series

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Abstract: The Earth Sustainability (ES) series is an innovative holistic approach to VT's Curriculum for Liberal Education (CLE) wherein students participate in a two-year interdisciplinary course series through which they engage with relevant sustainability issues using multiple disciplinary lenses. The ES social constructivist curriculum was designed to accelerate students' cognitive/social development and, as such, instantiates the structures and pedagogies that advisory groups advocate are critical to learning (AAC&U, 2007; AAC&U, 2005; NCPPHE, 2004; AAC&U, 2002; AAHE, ACPA & NASPA, 1998; AAAS, 1989). The series was designed specifically to instantiate the Learning Partnerships Model of Baxter Magolda (2004), wherein students are challenged and supported to develop more sophisticated ways of knowing, learning, conceptualizing, and approaching unstructured interdisciplinary problems (Bekken and Marie, 2007). Assessment data have been collected longitudinally from two cohorts who completed the series as well as from students who were not enrolled in the ES series. Results from longitudinal studies of both control and experimental students demonstrated that: 1) a liberal education curriculum could successfully incorporate the principles and assumptions of the Learning Partnerships Model and 2) students' epistemological development could be significantly advanced in comparison with students in traditional programs (Olsen, Bekken, Drezek, Walter, in review). On a five-point scale, students completing the ES program had advanced one full epistemological position, with no significant advancement among students in the control group. Despite these encouraging findings, a gap still exists in documenting the effects of advances in student epistemological development on students' longer-term engagement within the academy. Our preliminary findings from structured interviews of graduating seniors in both the control and experimental groups indicate that as students' epistemological positions advance, so does their degree of engagement in pre-professional programming. Students who completed the ES program at the end of their sophomore year are far more likely than their traditional CLE counterparts to have added a second major or minor. These students were also more likely to have participated in study abroad, service learning, undergraduate research, and internships during their junior and senior years and to have been involved with student-led organizations and to have accepted leadership positions in those organizations. Further, these students were also more likely to report having regularly attended artistic events and guest lectures on campus that were not required of them. Finally, this group was more likely to have donated time to local community service. Thus, our data documents that Earth Sustainability students from the first cohort took far greater advantage of a wide variety of opportunities unique to a Research I university than their more traditional counterparts.

References

- American Association for the Advancement of Science (1989). *Science for all Americans: Project 2061*, Oxford University Press, NY: Author.
- American Association of Higher Education, American College Personnel Association, & National Association of Student Personnel Administrators. (1998). *Powerful partnerships: A shared responsibility for learning*. Washington DC: Author.
- Association of American Colleges and Universities. (2002). *Greater expectations: A new vision of learning as a nation goes to college*. Washington DC: Author.
- Association of American Colleges and Universities. (2007). *College Learning for the New Global Century*. Washington DC: Author.

- Association of American Colleges and Universities. (Winter, 2005). *Peer Review: Emerging trends and key debates in undergraduate education*. Washington DC: Author.
- Baxter Magolda, M. B., & King, P. M. (2004). *Learning partnerships*. Sterling, VA: Stylus.
- Bekken, B., & Marie, J. (2007). Making self-authorship a goal of core curricula: The earth sustainability project P. Meszaros (Ed.) *Self-authorship: Advancing students' intellectual growth* (pp. 53-68). San Francisco: Jossey-Bass.
- Olsen, D., Bekken, B. M., Drezek, K. M., & Walter, C. T. (in review). Teaching for change: Learning partnerships and epistemological growth, *Journal of General Education*.
- The National Center for Public Policy and Higher Education. (2004). *Measuring up: The national report card on higher education*. San Jose, CA: Author.
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Strategies for Invention: Speed Dating in the Research/Writing Classroom

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Abstract: Writing problems are often thinking problems. The cognitive approach to negotiating writer's block advocates considering strategies for problem-solving during the pre-writing and composing stages. And these suggestions often cross disciplinary boundaries. Thus, problem-solving in the composition classroom can be problem-solving in the business or psychology classroom, as each discipline is involved in research. While this presentation does not ignore the situational contexts of either discipline, it does suggest that the strategy employed in this presentation for invention may find common ground that is adaptable by students of various disciplines and the instructor. Indeed, this strategy was developed in an interdisciplinary capstone course. One way to conceptualize brainstorming activities is as conscious and unconscious pre-writing strategies. In the unconscious, a writer is to develop thinking, when they aren't sure what to think, but it's just below the surface. A number of common activities include: free writing, brainstorming, webbing, and concept mapping. Conscious is when you know what you think but are ready to put it in a template or a format. Such organizational strategies might be Pike's Tagmemic mapping which leads students through the language of invention to consider contrast, variation, and distribution of ideas within a concept. Another usual heuristic might be to consider the ancient Greeks. What's often missing is a consideration that invention should be a social act. Rather than act in isolation with paper in pen, students need the dynamic of multiple perspectives and social interfaces of fellow students for their ideas to progress. This presentation will explain an invention strategy that works for the conscious and unconscious—and for those involved in the designing, conducting, and interpreting stages of research regardless of disciplinary constraint. In an effort to expand students' invention strategies for inquiry and research, this presenter developed an adaptation of a common dating ritual--speed dating! Students have reported they receive new ideas from others while engaged in this process; they hear themselves think out loud and are able to revise their thinking productively. From the presenter's end, I hear the boisterously engaged collaboration of productive conversation. I see much less of the silent or sullen groups of students who've run out of work in their groups and are now on to furtively or boldly talking about Saturday activities or what they last wrote in Facebook.

Strategies to Incorporate Creative Problem Solving in the Classroom

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Abstract: As an integral component of creativity, problem solving is a necessary skill for college students' success and one of the most important learning outcomes for life. Even so, students are rarely asked to solve meaningful problems or given the skills to solve problems they might face throughout their education. The psychology of creativity is complex and impacted by one's ability to process and store information. Cognitive learning is the process of receiving information into short-term memory, processing, and encoding information for storage into long-term memory. Creativity is impacted by one's ability to process information; however, the ability to understand when to access the knowledge is important for the information to be useful. Problem solving incorporates the learning processes of divergent and convergent thinking. Two different approaches to creativity are convergent and divergent thinking. Convergent thinking is the ability to bring information together, analyze it and come to a resolution. Conversely a motivated divergent thinker builds information through the process of elaboration and imagination and generates potential solutions while making sense of the issue, resulting in a creative idea. A pedagogical method to help students learn problem solving skills and promote creativity is creative problem solving. Creative problem solving is a method that may not guarantee a solution, but serves as a procedural guide. The creative problem solving process can be taught explicitly through learning strategy instruction. When teaching students a learning strategy, four cognitive principles should be followed. They include: (1) matching strategies with desired cognitive outcomes, (2) assessment of the learning strategy process, (3) matching the learning strategy with the learner's skills and knowledge, and (4) assessing the effectiveness of the learning strategy instruction. Common techniques used to teach creative problem solving include mind mapping, brainstorming, reflective journaling, and heuristics. When implementing these particular learning strategies, it is necessary to ensure that the cognitive goals of the processes are met. Creativity and problem solving are integral for the creation of life-long learners. Incorporating techniques such as the creative problem solving process allow educators the opportunity to develop students through substantive learning.

Student Evaluation of the Learning Environment: A Learning Theory-Based Approach to "Teaching" Evaluations

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Abstract: Student evaluations of teaching began at Harvard University during the 1920s. It appears that a number of other universities, including Michigan and Washington, began similar programs soon thereafter. Teaching evaluations were first introduced at Virginia Tech in the early 1970s when most classes were lectures and most of the information transfer was one-way. The process expanded quickly—for example, by the late 1980s Engineering faculty had made the collection of student perceptions of instruction mandatory for all sections of all classes. What did not evolve though was the student survey itself, which remains today virtually identical to the 1970s version. This issue and other concerns was addressed in a recently released two-year study by the University Committee on Evaluation of Teaching that concluded, among other things, Reading between the lines, the one thing that is perhaps most disturbing about the current state of affairs is the absence of meaning in what we are currently doing to evaluate teaching at Virginia Tech. The Committee's report (p. 11) also states: Any effort to assess effective teaching must have as a starting point some reasonably clear way of defining the concept—what is our conception of effectiveness? Consequently, we must engage in what is essentially a two-part process. One part involves determining from relevant research on learning and instruction where we might best focus our attention. The other

involves engaging members of the university community in a focused initiative that defines the range of good practices across diverse settings. National organizations have weighed in as well. Both the National Research Council and the National Academy of Engineering have concluded in their own reports that the entire faculty evaluation system needs to be based on a holistic approach constructed of an appropriate combination of student evaluations, peer evaluations, instructor self-appraisal, and administrative input. This work focuses primarily on student evaluations, which we suggest should be conducted for each course every semester—using a more contemporary set of indicators. As an alternative to the out of date SPOI form currently in use at Virginia Tech, we suggest the student evaluation needs to be an effective means for students to report in two different areas:

1. Faculty responsibilities in the creation of a learning environment
 - a. Did the instructor create an effective learning environment? And, to what extent was this environment: learner centered, knowledge centered, assessment centered, community centered, and reflection oriented?
 - b. Did the instructor effectively utilize learning resources, including technology
2. Student responsibilities in support of their own learning, including: class attendance and participation; homework/laboratory participation; and other study/coursework efforts.

A draft form of a new survey based on these principles has been developed and is currently being piloted in selected classes in which students are already familiar with the theories on which the form is based. We discuss the development of the form, present the form, and discuss results from pilot tests.

Student Perceptions of Service Learning

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Abstract: Virginia Tech, as a Land Grant University, has made a commitment to the state of Virginia to disseminate information to the cities, towns and communities to improve the quality of life of the citizens of the state by sharing information and leading education efforts. Landscape Establishment and Maintenance, an undergraduate horticulture class, is designed to integrate the theories and principals of plant handling and care with practical applications to actual landscape situations. This class is a designated a service-learning class; and a lab are offered as the service learning component of this class. Service Learning started at Virginia Tech in 1995 initially in the College of Arts and Sciences; and eventually through faculty, students, and community became a university wide program. Many classes are now offered with a service learning component as part of the course work. The service-learning component of this class involves a partnership with Gilbert Linkous Elementary School in Blacksburg, Virginia to work towards a sustainable school landscape. Students are tasked with reviewing the site conditions and current plantings and then applying techniques and methods from the class to develop a new planting plan that will improve the current landscape. Future classes will implement portions of these plans while also developing additional phases. This study evaluated student knowledge of service learning prior to taking the class; the importance and understanding of service learning; and student commitment to continue the Virginia Tech mission of service in the workplace and community. Students understanding and commitment were measure through a survey taken near the end of the class and lab.

Teaching Argument Evaluation through Game-Based Learning: The Flow-ting an Argument Game

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Abstract: Teaching critical thinking across the curriculum is a major emphasis in many colleges in recent years, and much has been written on different effective pedagogies, including game-based and problem-based learning. The task that teachers face is especially difficult when confronting the issue of how to teach students the skills needed to

effectively identify, evaluate, and construct/utilize inductive and deductive reasoning. These skills or argument identification and evaluation are important ones in the goals and learning objectives of a large number of courses in humanities and the sciences, yet the faculty charged with teaching them are often drawn from a range of different departments of varying familiarity with the technical terminology. A game-based approach—"The Flow-ting an Argument Game" based upon a "Flow Chart" for argument evaluation, makes that task both easier to approach for teachers, and more interesting and exciting for students. In my Practice-based Poster Session, I will partially demonstrate this game, but discuss also the pedagogy behind it, relate this to other effective strategies of game-based learning and skill-acquisition, its extension to identification of fallacies and other related skills—and of course make these games available to instructors for use in their own classes. Game-based learning has been cited as especially successful in critical thinking pedagogy, but this particular game might be of especial use to instructors not just of critical thinking and logic, but also of rhetoric, speech, communication, and especially multi-disciplinary general humanities (college "core") courses in order to meet central critical thinking learning objectives. It's a race to the finish through four distinct "levels" of argument identification and evaluation, and I further explain how to divide students into appropriately sized, etc., and how in game-based learning to provide level-specific "feedback" to the groups as they complete each level before going on to the next. The game uses examples drawn from real life and from a variety of different disciplines to test students' ability to 1) identify the relationship between premises and conclusions of arguments by classifying them as inductive or deductive; 2) distinguish various kinds of inductive arguments (analogy, generalization, and cause-and-effect reasoning), and kinds of deductive arguments (categorical, hypothetical, and disjunctive syllogisms) from one another; 3) the 'difficult' distinctions between argument form and content (deductive validity and soundness; inductive strength and cogency).

Thinking on Your Feet: An Assignment to Help Students Develop Impromptu Speaking Skills

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Abstract: Impromptu speaking is perhaps the single most common form of public speaking individuals are likely to engage in during their lifetimes. While many students will rarely be asked to deliver formal, prepared speeches in their careers or personal lives, most students will be asked to engage in impromptu speaking in a variety of contexts. Impromptu speaking opportunities outside of the classroom typically arise when an individual has a certain level of expertise on a topic and is unexpectedly asked to speak on that topic. Unfortunately, little research has addressed how public speaking instructors can help students develop the skills they need to effectively speak in impromptu settings, and the few impromptu speaking activities that appear in the pedagogical literature require students to speak on topics with which they are unfamiliar or that require no special expertise. I propose combining an impromptu speech with other class assignments in a public speaking class in order to better prepare students for scenarios in which they are unexpectedly asked to speak on a familiar topic. The impromptu speaking assignment proposed here occurs in the middle of the semester after students have delivered an informative speech on topics of their choosing. The informative speech requires students to engage in library research on their topics so that by the time they have finished this speech they have at least a modicum of knowledge about the topic. Students do not know ahead of time what aspect of their topics they will address in their impromptu speeches. At the beginning of class, the instructor gives each student who is scheduled to speak that day a question about his or her topic. The question is not overly specific, but is narrow enough to be appropriate for a short impromptu speech. For example, a student whose informative speech was about laws governing the carrying of firearms on college campuses might be asked, "What problems might be solved by allowing concealed carry on college campuses? What new problems might arise?" Students have five minutes to collect their thoughts before delivering a three to six minute impromptu speech, followed by a question-and-answer period. Although the impromptu speech is not graded quite as rigorously as the students' prepared speeches, they are expected to follow the same principles in regards to organization, content, and delivery. In addition to public speaking classes, this assignment could be valuable for any course that has an oral communication component. For example, students could give an impromptu speech in conjunction with research papers. Although research indicates that impromptu speaking can induce a fairly high level of apprehension, my experience suggests that students generally do well on this assignment. By helping students learn to speak with a minimum of preparation on a topic with which they are familiar, this impromptu assignment fills a gap that is traditionally left unfilled in communication education.

Using Everyday Tools Such as Microsoft Word 2010, Screen Capturing and Email to Foster Interactivity and Personalize Feedback in Distance Education

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Abstract: Using everyday tools, such as Microsoft Word 2010, screen capturing and e-mail, to foster interactivity and personalize feedback in distance education. Isolation of distance learners and interactivity are the two of the major topics in most literature concerning distance education and there are sounding reasons for that preference or need of research in that field. Isolation is appointed as the number one cause of distance learners drop outs (Rogers, 1990; Peters, 1992). The feeling of isolation derives from the distance learner's psychological perception of detachment from the instructor, peers, institution and resource materials. Often times the feeling of isolation is determinant of the learner's success or failure (Moore, 1989; Hillman, Willis, & Gunawardena, 1994). Great emphasis is given to the need to mitigate isolation issues by increasing the opportunities of dialogue among all parties within the design and practice. Isolation decreases with the learner's perception of availability of instructor, peers, administrative staff and resources as well the degree of connectedness (engagement) among them (Shin, 2003). Luckily, the advances in technology and the use of appropriate media capabilities can easily mitigate most issues regarding both synchronous and asynchronous interactivity. The objective of this poster presentation is to show how instructors can make use of simple everyday technology, such as Microsoft Word combined with screen recording software and the common email communication to foster interactivity and personalize feedback to written submitted papers. I am going to provide a practical example of the use of Microsoft Word 2010 review tools for adding comments to text; comparing different versions of the same document; comparing documents from different authors; restricting editing and protecting a document. After the document is revised I am going to demonstrate how to add a voice comment to it in order to personalize the feedback by bringing the communicating parties together in an asynchronous but still interactive way. The final product will be one file that can easily be exchanged by email. This type of asynchronous but intimate feedback fosters connectedness, and relationship. It is an example of "dialogue rather interaction that can prompt a psychological perception of transactional presence. This perception of availability and connectedness can interfere in the learner's sense of achievement, satisfaction and persistence, which are crucial for enhancing learning and retention (Moore, 1991, 1993; Shin, 2002).

References

- Hillman, D.C.A., Willis, D.J., & Guanawardena, C.N. (1994). Learner-Interface Interaction in Distance education: An extension of contemporary models and strategies for practitioners. *The American Journal of Distance education*, 8(2), 30-42.
- Rogers, P.H. (1990). Student retention and attrition in college. In R.M. Hashway (Ed.), *Handbook of Developmental Education* (pp. 305-327). New York: Praeger.
- Peters, O. (1992). Some observations on dropping out in distance education. *Distance Education*, 13(2), 234-269.
- Moore, M. (1989). Three types of interaction. *The American Journal of Distance Education*, 3(2), 1-6.
- Moore, M. (1991). Distance education theory. *The American Journal of Distance Education*, 5(3), 1-6.
- Moore, M. (1993). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical Principles of Distance Education* (pp. 22-38). London: Routledge.
- Moore, M., & Kearsley, G. (2005). *Distance education: A systems view* (2nd. ed.). Belmont, CA: Wadsworth.
- Shin, N. (2002). Beyond interaction: The relational construct of "transactional presence". *Open Learning*, 17(2), 121-137.
- Shin, N. (2003). Transactional presence as a critical predictor of success in distance learning. *Distance Education*, 24(1), 69-86.

Using Portfolios to Teach Anatomy & Physiology

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Abstract: A Radford University student shared, “Coming into this semester, I was terrified of taking Anatomy.” This sentiment is not uncommon for instructors who teach Anatomy and Physiology. Instructors struggle with engaging students who lack an intrinsic interest, enabling real learning and retention of the information, and presenting a realistic amount of information so that students do not become overwhelmed and subsequently disengage. This presentation explains and demonstrates how the inclusion of best-practice instructional techniques in higher-education resulted in enhanced learning for undergraduate students at Radford University in this course. Best-practice techniques utilized included: explicitly relating the content to future professional practice, visual-based instruction, and frequent summative examination. Unlike previous offerings, a personally illustrated portfolio that visually displayed the content of the course was required of the students. Pedagogical Practice: The course objectives were taught across clearly defined units. Interest was piqued by relating the course content to personal stories of individuals affected by muscular or craniofacial abnormalities, which highlighted the relevance of the information to future professional practice. True learning and retention was improved by incorporating visuals in the learning process. Students constructed clay replicas of the body’s frameworks (e.g., respiration, laryngeal), drew and labeled detailed presentations of the structures and muscles in bodily systems, painted the bones and sutures on a paper mache version of the head, and even made a mobile to display elemental components of one of the body’s frameworks. In-class visual creations were evaluated by other faculty, and those most reflective of the material were recognized. A requirement of the course was that students develop a portfolio whereby they visually illustrated the course information to serve as a future reference manual. Frequent summative evaluations included two equal parts, a visual reflection of the course content that had to be included in their portfolios and an in-class traditional exam. This professor found that utilizing best practices in higher education yielded positive student outcomes when teaching undergraduate students Anatomy and Physiology. Linking the content of the course with professional relevance and frequent summative assessments using an evaluative model where examinations of visual illustrations of the content, prepared by the students and featured in a portfolio, served as 50% of the students’ grades resulted in enhanced learning. Student feedback reflected increased interest, true learning, and retention of the course information. Comments included the following: “The visuals have been a fun way for me to learn the information without even having to study;” “Doing the visuals helps me learn material;” and “I love that you’re doing the visual as 50% of the grade.” More importantly, there was a statistically significant increase in summative and formative grades across two cohorts. Findings suggest that portfolio assessment presents a promising, albeit nontraditional, way to teach this course.

Using Video Clips in the Classroom: Exploring Active Versus Passive Techniques

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Abstract: Using visual media as a teaching tool in the classroom is becoming increasingly prevalent. The growing access to resources via the Internet, the upgrading of classrooms with “smart” technology, and the pedagogical desires to find new ways to engage and interest students are progressively turning films and shorts standard learning material. Visual media, specifically films, are commonly used within the teaching of political science, especially in the area of international relations. It is not universally accepted, however, that the use of visual aids such as films and video clips necessarily enhance the learning experience and retention of knowledge. Our study seeks to test the benefits of active learning with the use of videos of shorter length (i.e. fewer than fifteen minutes in length) in the classroom. Active learning should engage students before, during, and after the showing of a video clip. This is a marked contrast with passive learning which begins the discussion process only after the video has been shown in full. While passive discussion of video clips is unstructured, active learning is teacher and student driven at the

initial outset. The study we are presenting analyzes data collected over the course of a semester to gauge the generalizability of the pedagogical techniques in a mixed methods approach. Evenly distributed across the semester, the instructors use video clips to illustrate theoretical concepts to the students. The presentation of the clips alternates between active and passive techniques as discussed above. To assess the effects of these techniques, in the next class students are given a quiz to test the comprehension of the video, related class discussion, and reading material assigned on the day the video is shown. Using the quizzes, this study extracts data to enhance our understanding of how students receive information in different presentation formats. Additionally, two surveys provide information to aid in understanding the student's perceptions of the use of video clips in the classroom and to collect background data regarding student's familiarity and general experience with the use of video clips in classrooms throughout their college experience thus far. The use of media in the classroom is a widespread pedagogical technique within the discipline of political science in particular and in higher education in general. This research provides important insights into how this technique may better be used to promote student learning.

The Virtual Village Project: Problem-Based Learning Motivating Young Engineers

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Abstract: The Virtual Village Project helped develop problem-solving skills of sophomore civil engineering students through problem-based and self-directed learning methods. Five small group sections participated in this effort at Virginia Tech as part of a course entitled Introduction to Civil Engineering. The project also responded to a growing interest in international service among incoming students and built upon findings of NSF-sponsored research. Each section included five individual teams tasked to recommend solutions for infrastructure in a small, rural community in Central Haiti. Teams focused on water, sanitation, building construction, transportation, and energy. Students developed their own scope of work, analyzed various design alternatives per community and technical criteria, and presented their solutions in oral and written formats. This project is a pilot test for new course curriculum and the department will track the progress of these 110 students against 200 peers who participated in traditional Introduction to Civil Engineering small groups.

Writing Transfer and the Public Sphere: Students, Genres, and Rhetoric

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Abstract: The concepts of "writing transfer" and the "public sphere" are two widely disputed concepts in the field of rhetoric and writing, each with strong pedagogical implications. Once a commonplace in writing, the concept of writing transfer—the idea that writers develop a set of writing skills which they can then apply to a variety of different situations—has been increasingly called into question by many in the field of rhetoric and writing. Questions indeed abound: What (if anything) transfers? Where? And, how? Similarly, the concept of the public sphere and the writing that occurs in and around publics has received much attention in the field of rhetoric and writing. There has been exploration of the potential of moving the writing that occurs in introductory composition courses into the public sphere. Yet, such ventures into the public sphere raise many questions, ethical and otherwise: Whose public? Which public? Public—for what end? This poster session examines the design of one unit in one section of Virginia Tech's English 1105 "Introduction to College Composition." This unit forced the concepts of "writing transfer" and the "public sphere" into close proximity with one another. Entitled "Discussing Public Assertions in Three Genres," this unit adhered to the English Department's goals for the course and consisted of three phases, each corresponding to a different genre: Phase 1: Students write a thesis-support paper that forwards a

claim about a specific public statement or public text. Phase 2: Students write a letter-to-the-editor of the Collegiate Times that addresses a component of their Phase 1 paper. Phase 3: Students compose an oral editorial and a complimentary visual, adapting their writings and their arguments from Phases 1 and 2 in order to directly address an unmediated audience of their peers and their instructor. The three phases of this unit not only emphasize the conventions of particular genres, but they also associate genre conventions with distinct rhetorical situations. Moreover, by asking students to write about public assertions in three different genres, this unit encourages students to grapple with, and potentially answer, the vexing questions of “writing transfer” and the “public sphere.” My experience teaching this unit suggests that this unit promotes a rhetorical sensitivity to the nuances of public writing.

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