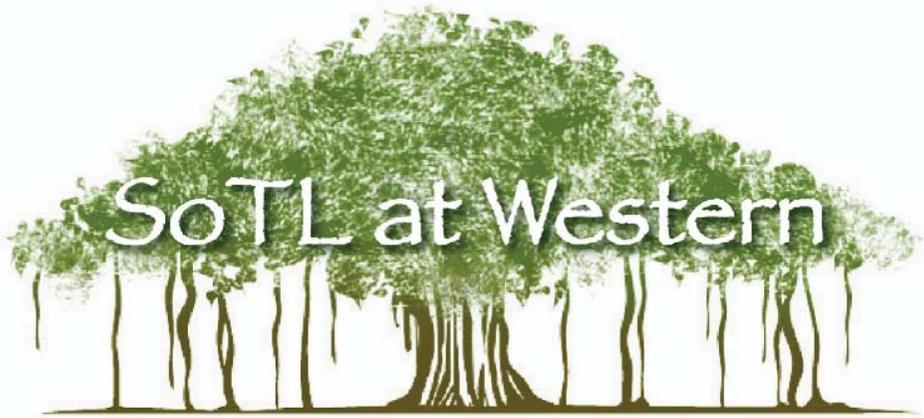


Coulter Faculty Center

Western Carolina University

Renaissance of Teaching and Learning



Case Studies in the Scholarship of Teaching and Learning at Western Carolina University

Marsha Lee Baker, Kathy Starr,
Cynthia Deale, & Phillip Sanger

Booklet Ten

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This booklet is a publication of the Myron L Coulter Faculty Center for Excellence in Teaching and Learning at Western Carolina University. Our Center's vision is "to be a community of teacher scholars promoting excellence in teaching and learning, and other forms of scholarship." The Scholarship of Teaching and Learning is the foundation for all of our efforts to assist faculty to enhance significant student learning. This publication represents the work of four of our faculty engaged in this important work. We invite you to visit our Center's website at <http://facctr.wcu.edu/>

Anna T. McFadden
Director and Professor

The Banyan Tree on the Cover

On the cover is an image of the banyan tree. With its ever-spreading canopy and its ever-expanding system of aerial roots, the banyan tree is the symbol of SoTL at WCU. SoTL is that canopy and from it grow the roots of active inquiry about learning, teaching, experimentation, innovation, collaboration, and dissemination. At WCU we conceive of SoTL both broadly and and formally. Broadly conceived, the SoTL canopy at WCU covers the entire range of faculty development programs that comprise a "teaching commons." At WCU, these programs include our faculty learning communities, our Summer Institute, our SoTL Faire and upcoming SoTL Retreat, and other programs. More formally conceived, SoTL at WCU is an evidence-based approach to establishing and sustaining focus upon continuous improvement of teaching and learning and assessment of that learning.

Contents

Introduction, <i>John Habel</i>	1
New Standards for Collegial Review	
A Taxonomy of SoTL Questions	
SoTL projects at WCU	
The Rutted Road to Change	
Meta-cognition and a First-Year Seminar, <i>Marsha Lee Baker</i>	4
Introduction	
Framing the Question	
The Context	
Gathering the Evidence	
Lessons Learned	
Preparing Students for the Anatomy Lab, <i>Kathy Starr</i>	7
The Context	
Gathering the Evidence	
Lessons Learned	
Collaboration is a Two-Way Street: Heritage Tourism and Tourism Planning, <i>Cynthia Deale</i>	11
Introduction	
The Context	
Framing the Questions	
Gathering the Evidence	
Lessons Learned	
Using the Student Assessment Learning Gains Tool to Evaluate Learning in Engineering, <i>Phillip Sanger</i>	15
Framing the Question	
The Context	
Gathering and Studying the Evidence	
Lessons Learned	

Case Studies in the Scholarship of Teaching and Learning at Western Carolina University

Introduction

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New Standards for Collegial Review

The purpose of WCU's new standards for collegial review is to establish a broader view of scholarship through Earnest Boyer's (1990) four, now famous domains of scholarship: Discovery, Integration, Application, and Teaching and Learning. In this view, scholarly activity occurs in a culture designed to create, advance, or transform new knowledge. When it is assessed, vetted by peer-review, and made public, this new knowledge becomes scholarship. To thrive, this broader view of scholarship requires clearly defined methods of evaluation, active administrative support, and a reward system that adheres to established discipline-based evaluation criteria. Also required to sustain the culture are faculty who are productive in each of Boyer's four domains of scholarship. This issue in The Coulter Faculty Center's Renaissance of Teaching & Learning Booklet Series presents four case studies of exemplary scholarly projects by members of WCU's faculty who are working in the scholarship of teaching and learning (SoTL).

A Taxonomy of SoTL Questions

In her introduction to *Opening Lines: Approaches to the Scholarship of Teaching and Learning*, Pat Hutchings (2000) proposes a "taxonomy of questions" that characterizes the scholarship of teaching and learning. According to Hutchings, one kind of question that characterizes SoTL is the "What works?" question, one that generates a search for evidence of the relative effectiveness of different teaching approaches. A second kind of question is the "What is?" question in which the focus is on describing the features of a particular approach to promoting student learning. A "Visions

of the possible” question, the third kind, leads to inquiry about what is essential and what is achievable with respect to teaching and learning in a given subject or discipline.

SoTL projects at WCU

The SoTL projects at WCU in this issue of the Renaissance of Teaching & Learning Booklet Series have been sparked by one or more of the questions in Hutchings’ taxonomy. In the lead case study Marsha Lee Baker of the Department of English reflects on “Visions of the possible” in her First-Year Seminar that is an introduction to literature about war and peace. She asks: “What can be taught? What can be learned? How does one learn; teach; with what consequence?” Inspired by these questions, she is able to lead her students to “began to see thinking as the core of their formal education.”

A “What works?” question is the trigger for Kathy Starr’s inquiry into activities that would reduce students’ fears and anxieties about working with human cadavers in an anatomy lab. A member of the Department of Physical Therapy, Kathy received WCU’s first SoTL Award in spring 2007 for the project described in the case she contributes here.

Cynthia Deale, a member of the Department of Management and International Business and Program Coordinator, Hospitality and Tourism, explores two kinds of questions in her study of her undergraduate tourism planning class in which her students conducted group projects in collaboration with WCU’s Mountain Heritage Center. She is interested in learning how “to engage students in an authentic, learner-centered, heritage tourism planning project involving collaboration with an outside partner”—“What works”? In addition, she is curious about “the process of learning that students experience while interacting with the subject matter and collaborating with an outside partner and with each other.”—“What is?”

Also in pursuit of a “What works?” question, Phil Sanger, a member of the Department of Engineering and Technology and Director of WCU’s Center for Rapid Product Realization, administers the *Student Assessment of Learning Gains* (SALG), an open-source inventory for assessing learning in college courses, to students in two of his courses. Armed with

the student responses he obtains with this assessment tool, he gains valuable insights into students' learning process on which he can base changes in instruction and course design.

The Rutted Road to Change

In higher education interest in teaching and students' learning is growing rapidly. Additional changes in both the goals and the practices of higher education have been fueled by advances in our knowledge about how students learn and by the knowledge explosion. As examples of teaching as scholarship, these case studies can serve as models of SoTL and thus help smooth the rutted road to change in the culture and practice of scholarship along which we at WCU now are traveling.

References

- Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. San Francisco: Jossey-Bass.
- Hutchings, P. (2000). Approaching the scholarship of teaching and learning. In P. Hutchings, (Ed.), *Opening lines: Approaches to the scholarship of teaching and learning*, (pp. 1-10). Menlo Park: CA: The Carnegie Foundation for the Advancement of Teaching.

Meta-cognition and a First-Year Seminar

Marsha Lee Baker, Associate Professor
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Introduction

Rhetoric and writing, my primary areas in English studies, make the scholarship of teaching and learning practically unavoidable if one is to examine thoroughly a life of the mind. At least since Plato, scholars have been asking: What can be taught? What can be learned? How does one learn; teach; with what consequence?

Framing the Question

Like self-reflective teachers in Kindergarten through Ph.D. programs, I step back from time to time to wonder: “Is this class making any difference in my students?” “What, if anything, are they learning?” What are they thinking?” “What is influencing their thinking...and do they know it?” My curiosity about students’ meta-cognition turned into a central learning outcome when I began teaching First-Year Seminars (FYSs). It also became a research question: What occurs in students’ thinking during this FYS?

The Context

In 1999, Western created a First-Year Seminar (FYS) as a Liberal Studies Core requirement in its revised general education program. Members of the faculty were encouraged to design fresh courses out of their disciplinary passions to help students catch the spirit of intellectual inquiry. The English Department immediately began offering multiple sections of FYS in Introduction to Literature, with instructors framing the introduction according to their individual interests. The one I’ve taught each fall since 2003 is borne of my passion about nonviolence, peace building, and the inextricable relationship between words and deeds. My FYS is an introduction to literature about war and peace. As a seminar experience

should, it includes much open space for conversation and reflection for students to unfold and to examine what they already know, assume, or never imagined about something as real as war or abstract as peace.

Gathering the Evidence

Rhetorical analysis makes me a qualitative researcher, as I study texts for what they say and how they say it (to put the study of rhetoric extremely simply). To peek into my students' minds, my primary discursive artifacts were "meta-cognitive essays" that each student wrote at the semester's beginning, middle, and end. Each essay also had three parts. My prompt first asked students to think back over their thinking in this seminar so far and then write about their thinking. "What do you notice about it?" "What's influencing it?" Then each student applied the same questions to one person in the seminar whose thinking stood out to him or her, and lastly each student asked the questions about the entire class. So as to reduce peer pressure about what to say or not say, I did not ask students to read each other's essays. At semester's end, I collated each student's trio of essays and organized two complete and identical sets of all essays in loose-leaf notebooks. I created the two notebooks so that I could assess inter-rater reliability of the analysis of my data—the students' essays. One notebook served as the raw material for my own data analysis, the second provided the raw material for a colleague's analysis.

After several readings of all the data, and reliability checks with my colleague, I drafted a comparative study of two students with disparate family and cultural influences, and with noticeably shifting degrees of interest in understanding each other's thinking, who emerged as the seminar's sages during the end-of-semester class collaborative project. I presented this work at the 2005 national convention of the Conference on College Composition and Communication. Further data analysis remains, yet I may have already learned the two most valuable lessons of this SoTL project.

Lessons Learned

Thinking--much less meta-cognition--as it turns out, isn't as obvious or natural a learning outcome as I had imagined. Other than a glimmer here and there across a dozen years, my students could not recall teachers asking them what they think, much less to think about their thinking. Initially, many were skeptical, even suspicious about me asking them to share their thoughts or speak their minds orally or in writing. You really want to know what we think?! They were confused and downright consternate about meta-cognition. What's that?! How will I ever do it?! As the semester proceeded, however, many began to see thinking as the core of their formal education, and some determined not to let it bleed into the margins again. Since 2003, I have developed additional teaching methods (most notably through my study of Donald L. Finkel's *Teaching with Your Mouth Shut*) to assure meta-cognition's prominence in my students' learning.

The second finding also reveals an omission. In their meta-cognitive essays, students often wrote about the absence of peace in their literal and literary lives. They often characterized "Peace" as an impossible and even undesirable ideal of perfection. Certainly no literary experience, formal or popular, had helped make the un-imaginable imaginable. The sobriety of this finding compels me to re-visit all of my courses and quite consciously choose what and how I teach in them.

As I work in the theory and practice of pedagogy, especially when talking with SoTL colleagues, at some point in each conversation or activity, the thought occurs to me, "This is what I ought to be doing. This is truly the core in my life as a university professor.

Reference

Finkel, D. L. (2000). *Teaching with your mouth shut*. Portsmouth, NH: Boynton/Cook.

Preparing Students for the Anatomy Lab

Kathy A. Starr, Associate Professor
Department of Physical Therapy

The Context

I teach a two-semester human anatomy course to first-year physical therapy (PT) students. An integral part of this course is a laboratory session involving cadaver dissections. Many studies have been done on the reactions of medical students when they first encounter cadavers. While some of these studies reveal that students' initial negative reactions dissipate relatively quickly (Hancock, Williams, Taylor & Dawson, 2004), others suggest that some students may actually suffer symptoms resembling those of post-traumatic stress disorder (Finkelstein & Mathers, 1990). Fear and anxiety can be a hindrance to learning anatomy and may affect students' attitudes about death and dying.

Framing the Question

As with new medical students, new PT students may be very apprehensive about the prospect of doing cadaver dissections. Since my students do not begin dissection until the third week of the first semester, I have time to prepare them for this experience. My question is: What activities would be effective in reducing students' fears and anxieties?

I realize that many student concerns relate to a fear of the unknown. Therefore, during the first week of classes I provide a tour of our anatomy lab so that students can become familiar with the new surroundings. I show a brief video in which I demonstrate dissection techniques in the same lab so that students can see exactly what will occur on the first day of dissection.

New students may also want to know how previous students have dealt with their anxieties. They watch a fifteen-minute video I produced in which six PT students from a previous class provide advice on coping with the fear and apprehension related to the anatomy lab. After showing this

video, I have students read a letter written by a first-year medical student in which she discusses her emotions and how she dealt with the stresses related to working with cadavers.

To alleviate concerns about how we obtain our body donors, students read the brochure provided by the anatomical gift program that describes the donation process. After reading the brochure, students write a brief reflective essay based on the following: "Your Aunt Mabel wants to donate her body to the anatomical gift program, but she is concerned about how her remains will be cared for, both by the students and by the body donor program. What do you tell her?"

On the day before students begin their first dissection we discuss the preparatory activities. Students then have an opportunity to ask questions or talk about any fears they may have concerning the anatomy lab.

Gathering the Evidence

The preparatory activities were first integrated into the anatomy curriculum in fall semester 2003. Several weeks after beginning cadaver dissections, students were surveyed to determine their initial reactions to the anatomy lab and whether the preparatory activities were beneficial in reducing their anxieties. Surveys completed by four PT classes (n = 117) have been analyzed using SPSS (originally, Statistical Package for the Social Sciences) software. Students surveyed were 37% males and 63% females. According to survey data, most of the PT students (91.5%) had not previously worked with cadavers. When asked how psychologically prepared they felt before beginning cadaver dissection, 91% felt that they were moderately to extremely prepared for this experience. A majority of the students surveyed felt that the preparatory activities were moderately to extremely beneficial (see Table 1).

Table 1. Physical therapy students' perceptions of activities used to prepare them for cadaver dissection.

Activity	Extremely Beneficial	Moderately Beneficial	Slightly Beneficial	Not Beneficial
Touring the anatomy lab prior to beginning dissection	50.4	39.3	9.4	.9
Viewing a video of cadaver dissections performed by the instructor (Dr. Starr)	27.0	49.6	21.7	1.7
Viewing a video in which six PT students from a previous class discuss their experiences in the anatomy lab	23.3	47.4	25.0	4.3
Reading a letter written by a 1 st year medical student about her emotions and stresses concerning cadaver dissection	28.1	46.2	19.7	6.0
Reading a brochure about the anatomical gift program and writing a brief reflection about body donation	24.7	45.3	27.4	2.6
Discussing students' fears and anxieties during the class session prior to the 1 st dissection	27.4	50.4	20.5	1.7

Lessons Learned

A thorough knowledge of anatomy is essential for becoming a competent physical therapist. There is no doubt that studying anatomical structures via cadaver dissections is vital to understanding the complexity of the human body. Before beginning this SoTL project, I did not dwell on students' concerns about dissection. It was part of the course and they needed to deal with it as they would any other assignment. This project, however, has helped me to realize the importance of acknowledging students' apprehensions. Helping them to cope with their anxieties will reduce their fears about dissection and prevent this experience from having a negative influence on their ability to learn anatomy. As an extension of this project, I have begun a qualitative study in which I am asking PT students to discuss their experiences in the anatomy lab and the impact cadaver dissection has on their anatomical studies.

References

- Finkelstein, P., & Mathers, L. (1990). Post-traumatic stress among medical students in the anatomy dissection laboratory. *Clinical Anatomy*, 3, 219-226.
- Hancock, D., Williams, D., Taylor, A., & Dawson, B. (2004). Impact of cadaver dissection on medical students. *New Zealand Journal of Psychology*, 33, 17-25.

Collaboration is a Two-Way Street: Heritage Tourism and Tourism Planning

Cynthia S. Deale, Associate Professor, Department of Management
and International Business and
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Introduction

Two objectives drive this project: 1) my interest in learning how to engage students in an authentic, learner-centered, heritage tourism planning project involving collaboration with an outside partner, and 2) my curiosity about the process of learning that students experience while interacting with the subject matter and collaborating with an outside partner and with each other. Hirumi's work (2002) indicates that learner-centered education has the capacity to create learning in authentic contexts, provide learners with multiple perspectives, and cause students to both become responsible for their learning and use modern technologies to support learning. Learner-centered education moves the focus from the teacher to the students' past experiences, needs and interests and to the development of higher-order thinking skills (Bonk & Cunningham, 1998; Hirumi, 2002).

The Context

Students in an undergraduate tourism planning class engaged in a project in collaboration with staff members at the Mountain Heritage Center (MHC) at Western Carolina University. One goal of this heritage tourism project was to help the MHC develop a Scots-Irish Heritage Trail in the State of North Carolina. Students worked in teams of four or five to identify and investigate possible sites for the trail. The project involved combining tourism planning methods and techniques with acquiring an understanding of the rich Scots-Irish heritage and culture of North Carolina.

Framing the Questions

Students' learning goals in my tourism planning class include :

- Develop useful definitions of planning concepts
- Demonstrate an understanding of resources, organizations, markets, and the complex process of tourism planning
- Increase understanding of the interplay of economic, political, social, cultural, and environmental issues related to tourism planning
- Understand the context of tourism planning within a framework of heritage tourism
- Understand the complexity of tourism planning projects
- Become involved in the tourism planning process

While I could, perhaps, teach these concepts through traditional lectures, discussions, class activities, and standard research projects, it seems that this kind of class structure does not truly immerse students in the planning process, nor does this class structure allow students to struggle with concepts or develop understanding of the context of heritage tourism planning. In the past, I intuitively thought that authentic planning projects were more effective and used them in classes, but through this scholarship of teaching and learning (SoTL) project I have begun to reflect on my use of these projects and to think more critically about how they might help students learn. Therefore, the authentic tourism planning project involving the Scots-Irish Heritage Trail explores the following questions:

1. How can engagement in an authentic project and collaboration between partners promote the progress of a project in tourism planning?
2. In the process of learning about heritage tourism planning, what kinds of engagement in authentic collaborative projects are effective?

Gathering the Evidence

I used qualitative methods to gather evidence to answer these questions. To gather information about the impact of the project on

students' attitudes, ideas, and experiences, I incorporated reflection assignments into the course. Each student group submitted regular progress reports via Web Cat. In addition, each group made a midterm presentation and a final presentation and provided a final report to the instructor and to the MHC. Project assessment specifically included:

1. The students:
 - A. Developing pre- and post-definitions and concepts of tourism planning and heritage tourism
 - B. Journaling on the development of the project. Producing ongoing reflections throughout the term focusing on both the project and on tourism planning concepts
 - C. Evaluating the final product via a rubric
2. The collaborating partner:
 - A. Determining whether student projects fulfill the mission of the MHC
 - B. Evaluating the final product via a rubric
3. The process:
 - A. Formative qualitative assessment by using journals, logs and notes produced by the collaborating partners—the MHC, the instructor, the students, and outside resource people
 - B. Summative qualitative assessment of a provisional model for collaboration between a class and a non-academic organization, such as a heritage tourism site

At the end of the semester students completed individual “SWOT” analyses of the strengths, weaknesses, opportunities and threats they perceived in the project. According to the students, the strengths of the project included participating in group work, learning history, and creating “real” products. Weaknesses included the group work, “too much” work, and poor communication among participants—the students, the instructor and MHC staff members. Threats to successful completion included under productive student groups, required use of Web Cat, and the selection of some of the heritage tourism sites. Students' journals reflected not only satisfaction with learning about the planning process and the history and

traditions of the Scots-Irish, but also frustration with the ill-defined nature of an authentic project.

Lessons Learned

Qualitative analysis of student papers reveals important lessons learned by students. For example, one student wrote: "Tourism planning is extremely time-consuming, in-depth and requires detailed organization skills. Scots-Irish have made up a huge part of our population and culture today." This work also serves as an example of the process of forging interconnections among an organization, in this case a museum; college students; and a variety of disciplines, including history and tourism within the context of a semester-long course. As I continue analysis of the qualitative data, especially the journals and logs produced by students and outside partners, I focus on the complex interplay of process, content, and collaboration in tourism planning and will try to incorporate these three in the next course. Feedback from students' and outside partners' reflections/ assignments will be used to frame a project for next year's class. Prior to conducting this SoTL project I had not reflected carefully on the three components and will use the results of the assessments to provide a framework for collaboration with an outside partner as well as a framework for future authentic class projects.

References

- Bonk, C. J., & Cunningham, D. J. (1998). Searching for learner-centered constructivist and sociocultural components of collaborative learning tools. In C.J. Bonk & K.S. King (eds.), *Electronic collaborative learner-centered technologies for literacy, apprenticeship, and discovery*, (pp. 25-50). Mahwah, N.J.: Lawrence Erlbaum.
- Hirumi, A. (2002). Student-centered, technology-rich environments (SCenTRLE): Operating constructivist approaches to teaching and learning. *Journal of Technology and Teacher Education*, 10(4), 1141-1182.

Using the *Student Assessment Learning Gains* Tool to Evaluate Learning in Engineering

Phillip A. Sanger, Associate Professor, Department of Engineering & Technology and Director, Center for Rapid Product Realization

Framing the Question

I teach two courses each year in quite different areas of the engineering discipline: one is the first course in a two-semester senior capstone course for majors in project management, and the second, statics and strength of materials, has both construction management majors and engineering majors. In both courses my goal was to obtain more information about what students learned and what techniques were most effective. I wanted to supplement the results of the so-called “cafeteria” course evaluation form our college uses, which, in my opinion, serves primarily as a measure of the popularity of the instructor and provides only limited information about what students learned and what techniques worked.

The Context

The National Science Foundation (NSF) helped to develop the *Student Assessment of Learning Gains* (SALG) tool for assessing learning in college courses. At the NSF’s website (Student Assessment of Learning Gains, n.d.) one can view examples of applications of this tool to courses in a broad range of disciplines, including English, business, the natural and biological sciences, and engineering. The website also collects confidential course assessment data from students. I selected two models of the SALG and adapted one to the project management course and the other to the statics and strength of materials course. One of the most useful characteristics of the SALG is that it permits the user to tailor it to the subject area of a given course. I added questions about specific content subjects that I thought were important to know as course outcomes. In the project management course I asked about work breakdown structure,

scheduling, and trade-off studies. In addition to content knowledge, I inquired about skill acquisition. For example, problem solving is very useful in the statics and strength of materials course, so in the assessment tool for that course, I presented a series of problem-based learning tasks.

Gathering and Studying the Evidence

In the analysis of the responses to the SALG, I focused first on responses that were at the extremes of a normal distribution of responses, both positive and negative. Therefore, for these courses scores either of 3 or less or of 4 or greater received attention. I was fortunate to have 18 and 28 students in the two courses, and thus I was able to use the sigma of the distribution as another characteristic to assess the responses.

In the project management course the students reported that they grew in both their understanding of a project and how to organize their work in a project. I was happy to see that the students appreciated the relevance of project management to the real world, even though many of them lacked enthusiasm for actually engaging in project management. Eventually, most engineers face a choice: remain faithful to the “technical” interests that lead one to engineering, or succumb to the lure of higher salaries and enter management . This course gives students a taste of what the management path entails and, perhaps, assists them in making a more informed choice about their career path. Students also provided useful information about other more specific aspects of the course, such as the sequence of instruction in various types of software, the pace of the course, and the use of peer rating procedure in the course’s grading system.

In the statics course, students’ responses revealed a large variation in views. They reported that problem-solving activities in class meetings were far and away the most effective learning opportunities. In addition, students’ GOT such key concepts as free-body diagrams and solving equations of equilibrium. The students also reported that working collaboratively with the instructor and their peers supported their learning. Regarding content knowledge, students indicated the later in the term a

given subject was introduced, the less confident they were that they had learned it well. This observation is not surprising for a subject that depends on doing it to learn it.

Lessons Learned

The final set of questions in the SALG asked students to grade themselves, their classmates and their teacher. These questions and the correlation of the responses were interesting and quite different in the two courses. In the project management course, over a third of the students gave the instructor a lower grade than they gave themselves. In statics, the reverse was true; almost half the students gave the instructor a higher grade than they gave themselves. In addition, in this course there was a positive correlation between a student's expected grade and the grade a student assigned to the instructor. This could suggest some students take credit for their learning and high grades when they are successful, but when their performance is poor they attribute their lack of success to ineffective teaching. Not surprisingly, this pattern was less pronounced in the statics course than it was in project management. In future assessments using this tool, I will explore students' attributions about the causes of their learning outcomes.

The NSF's SALG afforded my students an anonymous and very useful avenue to reflect on course learning outcomes. By tailoring the SALG to my courses, I obtained valuable insights into my students' learning process that will permit me to make changes in instruction and course design that will strengthen students' learning.

Reference

Student Assessment of Learning Gains. (n.d.). Retrieved August, 9, 2007, from <http://www.wcer.wisc.edu/salgains/instructor/>

