Volume 3, Issue 2

October 2002

Mediated Learning

A Newsletter by and for the Instructors of The University of Montana

Perry's Model of Intellectual and Ethical Development in the College Years

Mark Cracolice
Director, Center for Teaching Excellence

The late Harvard psychologist William G. Perry, Jr. (1913–1998) spent an entire decade of his life conducting research for a single study on the developmental processes of college-aged students. This work culminated in the 1968 publication of his book *Forms of Intellectual and Ethical Development in the College Years: A Scheme.* The theory espoused in this book continues to intrigue developmental psychologists and educators, and it has recently received renewed interest as evidenced by the publication of a new edition of the book in 1999. Although quantitative research based on Perry's Model remains scarce, the model can provide a foundation for reflection on teaching practices related to our efforts to promote the intellectual and ethical development of our students.

Perry's research methodology was based on what is now known as a grounded theory approach, a technique that is frequently

(See PERRY'S MODEL, page 4)

Intellectual Growth: An Opinion of an Expert Student

Anna-Kate Ambrose
Senior, Chemistry

Physics, the bane of many a chemistry major's existence. Yet, it is a required course and somehow we all get through it. When I had to take the class, I thought to myself that if I had wanted to take physics, I would have majored in the subject. Five days a week I sat in that orange lecture hall at 1:00 in the afternoon in those uncomfortable chairs with the subject that was my worst. Yet, against all odds, and against my own will, I enjoyed that class. My opinion of the subject really did not change much, I still avoid the physics side of things if I have the choice, but somehow my professor got me motivated, made it interesting and made lectures fun, if any lecture can be called that. Dr. James Jacobs, Professor and Chair of the Department of Physics and Astronomy, had numerous tricks up his sleeve that helped even me to enjoy and survive his class.

For me, the most motivating trick that Dr. Jacobs used was in getting to know his class. Our physics class was a fairly full lecture hall

(See INTELLECTUAL GROWTH, page 6)

Inside this Issue

Perry's Model of Intellectual and Ethical Development in the College Years 1

Intellectual Growth: An Opinion of an Expert Student 1

Editorial 2

Teaching Profile: Annie Sondag, Department of Health and Human Performance 3

Grant Opportunities in Teaching and Learning 7

Editorial

Professor Mark Cracolice

"The challenge for our institutions of higher education is to successfully blend the exposure to all aspects of human intellectual activity, especially our artistic propensities and our technical skills."

Alan Greenspan, chairman of the Board of Governors of the Federal Reserve System, was recently awarded the Stephen P. Duggan Award for International Understanding. His acceptance speech at the Institute of International Education in New York pointed out the critical need for a liberal arts education, such as that offered by The University of Montana, as well as some of the economic problems related to paying for such an educational institution. I would like to allow Dr. Greenspan comments to serve as this month's editorial. I invite your responses to these ideas. Please consider contributing to *Mediated Learning.*

"The roots and nature of how the human mind innovates have always been subject to controversy. Yet, even without hard indisputable evidence, a remarkable and broad presumption is that the ability to think conceptually is fostered through exposure to philosophy, literature, music, art, and languages. So-called liberal education is presumed to spawn a greater understanding of all aspects of living--an essential ingredient to broaden one's world view. As the President of the University of Pennsylvania, Judith Rodin, put it, such an understanding comes by "vaulting over disciplinary walls" and exploring other fields of study. Most great conceptual advances are interdisciplinary and involve synergies of different specialities.

Yet the liberal arts embody more than a means of increasing technical intellectual efficiency. They encourage the appreciation of life experiences that reach beyond material well-being and, indeed, are comparable and mutually reinforcing. The intense pleasure many experience from listening to Mozart's great D Minor Piano Concerto has much in common with the deep satisfaction of solving a complex mathematical problem. The challenge for our institutions of higher education is to successfully blend the exposure to all aspects of human intellectual activity, especially our artistic propensities and our technical skills.

The challenge is particularly daunting because scientific knowledge expands and broadens the measurable rewards of its curriculum at a pace that liberal arts, by their nature, have difficulty matching. The depth of knowledge in nuclear physics is today far greater than it was a century ago, and useful teaching hours have doubtless expanded many fold. But do the same possibilities exist for courses in English literature?

Similar differences between science and the arts arise in the nonacademic world: Engineering and metallurgical insights have reduced the number of people required to produce a ton of steel, but the same number of musicians will be needed to perform a Beethoven quartet this evening as were needed a century ago. Many of you will recognize this application of Baumol's law. To make the point even more graphically, Daniel Patrick Moynihan has noted that the Minute Waltz could be played in fifty seconds, but he wondered whether it would sound as good.

Overwhelmed with the increasing scientific knowledge base, our universities are going to have to struggle to prevent the liberal arts curricula from being swamped by technology and science. This institute, by encouraging Americans to seek wider educational experiences abroad, is doing its part to prevent that from happening.

The advent of the twenty-first century will certainly bring new challenges for our society and for our education system. We cannot know the precise directions in which advances in technology, conceptual thinking, and the transmission of knowledge will take us. However, we can be certain that our institutions of higher education will remain at the center of the endeavor to comprehend those profound changes and to seize the opportunities to direct them toward ever-rising standards of living and quality of life."

Teaching Profile:
Annie Sondag, Department of Health and Human Performance

Brian Ehlert
Junior, Chemistry

After Professor Annie Sondag received her Bachelor's Degree in Education from Southern Illinois University-Carbondale, she continued on to receive a Master's Degree in Rehabilitation Counseling from the same institution. After completing her Masters, she worked as a Rehabilitation Counselor for several years before returning to SIU-Carbondale to work towards her Ph.D. in health education. Sondag fell in love with health education because it focuses on maintaining and improving the health of the "whole" person including their social, spiritual, intellectual, physical and emotional health. In 1988, she received her Ph.D. in Community Health Education. She taught for five years at her alma mater and subsequently moved to The University of Montana. She is now a professor in the Department of Health and Human Performance. Currently she teaches courses which include: Theories of Health Behavior and Counseling, Foundations of Health Promotions, Health Issues of Children and Adolescents, and Health Promotion Strategies.

Attendance is taken every day in Sondag's classes—not for a grade or to insure that students will always come to class, but to allow Sondag to get to know each of the students by name. She feels establishing a connection is an essential part of teaching. By taking roll and making eye contact with each student at every class meeting, she is able to establish that connection. Sondag has found if students feel the professor actually cares about their academic success, their work ethic in the course greatly improves. She has also found students feel more obligated to come to class because she takes roll and notices when they are not there. Students will often call and leave messages telling her when they will have to miss class. However, Sondag does not know if this is because she takes attendance or if there are other underlying variables contributing to the pattern.

Lori Coffman, a student in Sondag's Health Issues of Children and Adolescents course, says she would still come to class every day even if roll was not called. She says the thing pulling her into the classroom every Tuesday and Thursday is Sondag's enthusiasm. Sondag feels enthusiasm is a key element of successful teaching. In order to pull students in and help them become successful, the instructor needs to be enthusiastic about the subject. She says this is one of the most important aspects of a great teacher. If an instructor is not enthusiastic, he or she cannot expect the students to be enthusiastic. "Your students will never be more enthusiastic about your topic than you are," Sondag explains. She admits when she first started teaching she did not know the best teaching theories or methods, but what she did have was a sincere desire to help students learn. Sondag's passion for teaching helped her pull students in as a new teacher and continues to help her keep students' interest as an experienced teacher. Lori Coffman feels Sondag cares about her subject and her students, and it rubs off onto her students. Enthusiasm helps motivate students who not only need to know that their instructor cares about the subject, but also need to know that their instructor cares about their success.

Sondag believes another important aspect of teaching is to care whether or not students succeed. This is *why* she likes to get to know her students. If students feel an instructor does not care, they may not work as hard at succeeding. If instructors put effort into showing students that they want students to succeed, students will put more effort into becoming successful. A method that lets students know the instructor cares is to learn more about them and their life experiences. These experiences can then be correlated with the course material. If students see how the material they are learning relates to their

(See SONDAG, page 4)

Professor Annie Sondag

"Your students will never be more enthusiastic about your topic than you are."

Sondag

(Continued from page 3)

"She cautions, however, that this doesn't mean that one can 'slack' on knowledge of content and the use of effective teaching strategies."

world, they will enjoy the class more and put more time into it. One way Sondag incorporates the real world into her classroom is by requiring service learning projects in her courses. She also presents actual studies to the class and tells real stories, and she is not afraid of letting students know about her life. She believes this helps to blend the material into the world that we all know.

Sondag acknowledges the other important aspects of teaching, including knowledge of content, learning theories, human development, and many others, but believes that instructors must remember to always be passionate about their subject. Without passion, all the other aspects of teaching will not be nearly as effective. She cautions, however, that this doesn't mean that one can "slack" on knowledge of content and the use of effective teaching strategies.

As I sat through Sondag's class I couldn't help but notice that students were eager to answer her questions and to participate in discussions. Many students appeared to be very comfortable with asking questions and stating their opinions. I feel this would not be possible if Sondag did not work as hard as she does to get to know her students and make *that* connection with them. Certainly, it would not be possible without her passion for teaching.

Perry's Model

(Continued from page 1)

"Dualistic-thinking students believe that they learn by working hard at learning the correct answers."

applied in modern social science research. This methodology gives social scientists a structured framework in which to operate while conducting an investigation. He used surveys and interviews, including many four-years sets of interviews that followed individual students across their college years. The theory that emerged from Perry's work is a nine-position developmental scheme along which students progress intellectually and ethically. The nine positions are grouped into four categories. I will focus on the four categories in this article for the sake of brevity and simplicity.

Category 1: Dualism

Most students enter college with a *dualistic* epistemological view of the nature of knowledge. There is right and there is wrong, with nothing in between. College faculty know the answers, and the job of a student is to learn the right answers. Dualistic-thinking students believe that they learn by working hard at learning the correct answers. Dualism begins to thaw when students see that authorities disagree about the "right" answer, but some students will compensate to retain their dualistic views. This can be accomplished by avoiding classes in philosophy or literature, for example, and gravitating towards courses in mathematics and science, where dualism is more prevalent as a way of knowing. Category 1 students will also dismiss those authorities who have alternate opinions as poorly qualified, with an imperfect view of *The* Answer. These students will also believe that alternative opinions are given to them so that they can learn to find the right answer in the face of another that is incorrect.

Category 2: Multiplicity

Many students begin to see that a black-or-white view of the world no longer provides the best fit to their concepts across an increasing number of disciplines, so they eventually give up the dualistic view and progress to adopt a *multiplistic* view. A phrase often expressed by multiplistic students is, "Everyone has a right to their own opinion." At this stage of development, multiple perspectives are acknowledged, and the external authority, the college instructor, is no longer *the* source of answers. Since some answers are not known, knowledge is divided into two categories: things we do know and things that we don't know—yet. With respect to something that

(See PERRY'S MODEL, page 5)

Perry's Model

(Continued from page 4)

authorities don't know yet, all opinions are equally valid. As students grow into multiplistic thinking, they find that more and more problems fall into the "we don't know" category. They believe that success in courses should be based on stating an opinion and providing supporting information, no matter the quality of the argument (because all opinions are essentially equally valid).

A Critical Transition

Perry found that the Category 2 to Category 3 transition to be extremely important, using the term "drastic revolution" to describe the change. A significant number of students will regress, pause in their growth, or stop growing altogether in the Category 2/3 cusp development vicinity. To help students make the transition, Perry recommends that instructors "increase the student's experience of recognition and confirmation as a member of the community by virtue of the courage with which he undertakes the risks of care." In other words, college instructors need to (a) be open about their thinking so that students can use it as a model and (b) explicitly recognize that students must be courageous in taking the risks associated with growing into the Category 3 and Category 4 thinking described below.

Category 3: Relativism

Learning that knowledge is relative and ideas are not necessarily equally valid begins to take hold as a student makes the transition to Category 3. This category is referred to as *relativism* because knowledge is seen as contextual and relative. Even the knowledge of authority figures, such as college instructors, becomes something that should be evaluated in context and perceived as relative to how well that authority can support the case. There are two very important transitions made by students at this stage. First, they begin to see that different disciplines have different reasoning methods. Thus, the type of evidence supporting "facts" in physics differs from evidence that supports theories in sociology. Second, Category 3 students can remove themselves from the context in which they think and analyze ways of thinking. They can now analyze thinking skills separated from their contexts in addition to knowing how to apply thinking skills to solve novel problems.

Category 4: Commitment

After students learn to see the world in relative terms, with different degrees of evidence supporting different arguments, theories, and concepts, the final stage of their intellectual development is to make *commitments* in support of positions. These commitments may be intellectual (I find the evidence that says that a person's intelligence is about half inherited and about half environmental to be well documented), political (I will register as a Democrat because I agree with more of their policies than those of other parties), emotional (I will commit to this career, relationship, lifestyle, etc.), moral (I will behave so that I am an asset to my community), etc. Commitment is also seen as something that can evolve, and the process of commitment is an ongoing, changing course that requires continual attention that results in continuing personal evolution.

Moving Students Through Perry Categories

Perry found that most students in his study entered Harvard in Category 1 and left as seniors in Category 4. Research in other settings has shown dramatically different results, however. Our own work in this area and that of others indicates that many students enter college in Category 1 and leave in Category 1 or 2, never making the critical transition into the third category.

Given that students in higher Perry scheme categories have a more sophisticated, higher quality mechanism for thinking that matches better with what we consider to be expert thinking, the obvious question is "How can college instructors promote the development of students through the Perry categories?" There seems to be two critical elements. First is the "+1" strategy. If we teach at a level one category ahead of our students' current state of development, we draw them up to the higher

(See PERRY'S MODEL, page 6)

"Our own work in this area and that of others indicates that many students enter college in Category 1 and leave in Category 1 or 2, never making the critical transition into the third category."

Intellectual Growth

(Continued from page 1)

and Dr. Jacobs put forth the effort to put names with each of the faces in that class. Whether he ever actually learned everybody's name, I don't know, but I do know that he knew mine. This was motivating to me for a couple reasons. The first is that it showed me that he cared. I saw this as showing that he cared about me as an individual student rather than just another pair of eyes and ears in the room watching and listening as he lectured behind that big desk at the front of the lecture hall. What this did was to put him on a much more approachable level to me as a student. This, in turn, led to a motivation for me to do well in his class. When a professor knows my name, and so knows who I am when grading and handing back tests, it is a great motivation for me to do well. If I know that the professor knows who I am, I tend to take a test much more seriously than if I am just an anonymous name on paper. I feel that a test is a direct reflection on me and I don't want a professor to associate a bad test score with me and think that I'm not a good student.

Along with learning students' names, Dr. Jacobs also got very excited about his subject. It was obvious to me that we all innately have different interests and strengths because I myself find it difficult to understand how anyone could get so excited about physics. Dr. Jacobs's enthusiasm was contagious, though. That's not to say that I got excited about physics, but I did enjoy it. Dr. Jacobs reminded me to some extent of my high school chemistry teacher, Mr. Lowande, the man who got me interested in chemistry in the first place. Dr. Jacobs had demos that were entertaining and educational. I always looked forward to his demos because they were fun and they gave me a real, visible example of what he was lecturing about, real world proof in other words. Dr. Jacobs's enthusiasm said many things to me as a student. First, it said that he loves what he does. It showed me a man who honestly loves his job as a professor. It also told me that he really wanted to see me learn. I saw that he chose to be a professor because he wants to see me, the student, learn and he wants to help me to do well. Last, but not least, it showed me that physics did not have to be a horrible, tedious class that I would resent every week day come 1:00.

Between learning students' names and being contagiously enthusiastic about his subject, Dr. Jacobs has made an outstanding contribution to my college experience. I have recently decided to use my chemistry degree to teach high school chemistry, and Dr. Jacobs along with my high school chemistry teacher, Mr. Lowande, have been two of my major inspirations in determining what kind of teacher I would like to be. If I could have the opportunity to have even a fraction of the effect on a student's education that these two men have had on mine, I would be honored to count myself in the same profession.

Perry's Model

(Continued from page 5)

level. We can model for them a more sophisticated level of intellectual development, allowing them to first externally display the characteristics of the higher category and then internalize those qualities. Second, Perry frequently spoke of the *courage* needed to give up a way of thinking and progress into uncharted waters. We must emotionally support our students and give them an encouraging and compassionate environment in which they can grow.

Grant Opportunities in Teaching and Learning

In this column, we highlight funding opportunities specifically related to teaching and learning. A brief abstract is presented, followed by the web site address from which you can obtain further information. Please contact us at cte@selway.umt.edu if you are aware of information that can be presented in the next issue of Mediated Learning.

The National Science Foundation seeks to promote the involvement of members of the physical science and mathematics research community in public education through its Internships in Public Science Education program. Proposals are requested that will set up partnerships between researchers in math and the physical sciences and specialists in public science education. Two million dollars will be awarded over about twenty proposals.

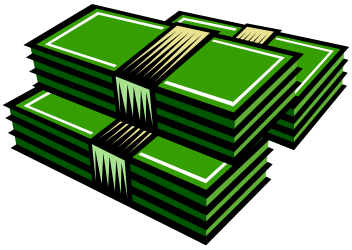
Due: 10 February 2003
http://www.nsf.gov/pubs/2002/nsf02064/nsf02064.htm

The National Science Foundation has a program to promote gender diversity in science, engineering, technology, and mathematics education. They seek proposals to investigate gender-related difference in learning, gender-related differences in educational experience, interest, and performance; and pedagogical approaches and teaching styles that are gender-neutral or encouraging to female students. The program supports three types of activities: (1) research projects on gender-based barriers to learning science; (2) demonstration projects to apply research findings about gender-inclusive practices, particularly into pre-service and in-service professional development programs; and (3) dissemination projects that bring gender-inclusive models to national audiences.

Due: 23 January 2003 (preliminary);
11 April 2003 (full)
http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf03502

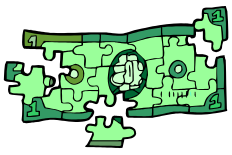
The Educational Testing Service provides summer support for graduate students in psychology, education, teaching, learning, psychometrics, statistics, literacy, policy research, linguistics, educational technology, new constructs, minority issues, testing issues including alternate forms of assessment for special populations, and new forms of assessment. They must have completed one full year of coursework toward their Ph.D. or Ed.D. to be eligible. Students receive $4000 for an eight-week internship plus reimbursement for travel.

Due: 01 February 2003
http://www.ets.org/research/fellowships.html



The Association for Institutional Research is funding a program to provide professional development opportunities to doctoral students, institutional researchers, educators and administrators, and to foster the use of federal databases for institutional research in postsecondary education. The program has four major components: (1) dissertation research fellowships for doctoral students including the Charles I. Brown and Cameron Fincher Fellowship Awards for outstanding dissertation proposals; (2) research grants for institutional researchers and faculty; (3) a senior fellowship program; and (4) a Summer Data Policy Institute in the Washington, D.C. area to study the national databases of NSF and NCES. Funding is $15,000 for dissertation fellowships, $30,000 for research grants, and $110,000 for senior fellowships.

Due: 15 January 2003
http://airweb.org/page.asp?page=3



Mediated Learning

A Newsletter by and for the Instructors of The University of Montana

Center for Teaching Excellence
Mark S. Cracolice, Director
The University of Montana
32 Campus Drive
Missoula, MT 59812

Phone: 406-243-4556
Email: cte@selway.umt.edu

www.umt.edu/cte/

The Center for Teaching Excellence

The Center for Teaching Excellence at The University of Montana was established in July, 1999 when it received approval from the Board of Regents. The Center is administered out of Academic Affairs.

The University of Montana