

# Mediated Learning

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



## Development of Students' Intellectual Skills: A Study of Successful Efforts, Part III

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*Director, Center for Teaching Excellence*

With this article, we conclude our three-part survey of the six cardinal components of curriculum design that result in measurable gains in students' general intellectual skills. Please see the November and March issues of *Mediated Learning* for Parts I and II.

### Metacognition

Metacognition is the process of bringing one's own thinking and reasoning into

consciousness. Curriculum designs that have demonstrable effects on improving higher-order thinking skills always feature metacognition as one central component. A key idea here is that once students have constructed new and/or improved modes of higher-order thinking, they need to also become conscious of the rule, procedure, process, or skill they have just developed.

*(See INTELLECTUAL SKILLS, page 4)*

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## Excellent Teaching: An Opinion of an Expert Student

*Kevin Rigby*  
*Senior, Chemistry*

The essentials of successful teaching were made evident to me one day in my son's kindergarten class. As I interacted with the youngsters, getting my clothes and hands dirty with paint and glue, I realized that I was in the midst of an amazing educational phenomenon. Foundations were being laid. It was here, in this classroom of eighteen small children, that I witnessed the essence of teaching.

The goals of teaching at this level are simplistic and focus on engaging students to

think critically about what they are presented with. This allows students to independently develop a personal taste or perspective on the material. As students think critically and develop their own ideas on a subject, a personal importance level is placed on it, and an appreciation or awareness is developed, whether it be positive or negative. Even at the college level, the basics remain the same. We are still developing personal tastes and gaining awareness. The patience, dedication, and

*(See EXCELLENT TEACHING, page 6)*

## Editorial



Professor Mark Cracolice

This is the final issue of *Mediated Learning* for the 2001-2002 academic year. I sincerely hope that we have brought you information that will help you in your quest for ongoing growth as a college instructor.

I have been continually asking you to make contributions to this newsletter by sending your ideas for articles to us at [cte@selway.umt.edu](mailto:cte@selway.umt.edu). I now ask for a different type of feedback. Would you please let us know what's been working and what hasn't? Specifically, what continuing features do you find most interesting? What features should we replace? What type of information do you want to see in order to assist you in your growth as an instructor? In general, each newsletter has four articles: (a) an essay on how people learn or on-campus innovations in teaching or support for instructors, (b) an essay by a student on their view of excellence in teaching, (c) a profile of an instructor on campus who has been recognized in some way as an innovator in the classroom, and (d) brief descriptions and web addresses of resources describing grant opportunities related to teaching and learning. I strongly encourage your feedback about the utility of each of these features so that we can improve our product for the next academic year.

I also ask for your suggestions on other activities, events, or any other form of assistance that the Center may provide.

Many of us use this time of the academic year to reflect on the past year and plan for the changes that we will integrate into the next

year. To help in your planning, consider the following statistics from UCLA's Higher Education Research Institute. This organization administers and analyzes the annual Cooperative Institutional Research Program Freshman Survey, which is the oldest and largest survey that collects normative data on entering college students. I find the historical trend in the data to be rather sobering.

The Fall 2001 survey asked students if they spent six or more hours per week studying or working on assignments in the past year. Only 35 percent said yes. This question was first asked in the 1987 survey, when 47 percent said yes. What do students get for less and less work over time? Higher grades, of course. A shocking *44 percent* of this year's freshman class earned an A average in high school. Compare that with 18 percent in 1968. I also find it very interesting that only 54 percent of the freshmen rated their emotional health as above average or higher. This is the lowest number since the question was first asked in 1985, when 64 percent felt emotionally healthy.

Alexander Astin, the founding director of the survey, said, "The combination of academic disengagement and record grade inflation poses a real challenge for our higher education system, since students are entering college with less inclination to study but with higher academic expectations than ever."

I concur. Let's work together to overcome the challenges before us.

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*"The combination of academic disengagement and record grade inflation poses a real challenge for our higher education system, since students are entering college with less inclination to study but with higher academic expectations than ever."*

"I believe that one of the greatest moral reforms that lies immediately before us consists in the general introduction into social and civic life of that habit of mental procedure which is known in investigation as the method of multiple working hypotheses."

*T. C. Chamberlain*

## Teaching Profile:

### Betsy Bach, Assistant Provost & Professor, Department of Communications

Brian Ehlert

Sophomore, Chemistry

Professor Betsy Bach never set out to become a professor. She received her bachelor's degree in Communication from Hope College in Holland, Michigan. She then elected to stay in Holland to work on the police force for three years. Due to her degree in Communication she was assigned to mitigate domestic disputes and community services. While working in community services, she did a lot of teaching to middle school and high school students, along with mediation. This is where she started to fall in love with teaching. She chose to go back to school and later received her master's degree in Communication Studies from The University of Montana and worked as a teaching assistant. She then moved to the University of Washington for a Ph.D. in Communication and a minor in Instructional Communication. In 1983 she found her way back to UM to start her career path off as a professor in Communication Studies. Throughout her career she has received the Distinguished Teacher Award and has also received recognition as a Master Teacher from the Western States Communication Association. Bach currently serves as the Assistant Provost for UM as well as a Professor of Communications.

Bach spends a majority of her time working as the Assistant Provost, but has chosen to continue teaching. She loves to have some kind of contact with the students on campus. It also gives her a chance to learn more about what is going on outside of Main Hall. The Internet has made class preparation a little easier for Bach. On the web she is able to look up references and examples on the materials that she teaches. Although the Internet has made preparation easier, Bach still finds time to do some reading on her subject. However, Professor Bach spends time on more than just learning about the latest research in her field. She also spends time studying the students in order to adapt the materials to them.

Bach believes that humor can be found in any situation. She also thinks that it is an incredible and effective tool in the classroom. She loves

to laugh with the students, and it brings her closer to them. Working with graduate students, or even with undergraduates, establishing some sort of one-on-one interaction can help out immensely. Humor also helps students to relax in class. Bach says that her humor and ability to use it in her teaching comes from being a cop. When working on the domestic disputes force she always tried to get fighting neighbors or spouses to laugh with each other, which gave her a window of opportunity to work with the situation and achieve a peaceful outcome. Humor is very useful in the classroom. It helps to add color to the lecture or discussion and aids in keeping the students involved.

As an instructor, Bach sets some expectations for herself. She wants to be able to challenge the students. She finds ways to get them to reflect upon what they are learning and also think in new ways with the knowledge that is given to them. Bach also believes that the classroom should not stop "at the door." She wants the students to think not only about things in the classroom, but to also think about things that are happening all around them. The students learn to apply their knowledge to everyday life. Bach is also known for sparking some great classroom discussions. She doesn't see herself as an "instructor," but more as a guide. In her eyes she is there to guide the students to the knowledge. She is also there to be a mentor and a coach. Her role is to challenge the students so that they are able to come up with ideas of their own without her aide.

In class Bach sits in a desk that is placed in the circle with the rest of the students. Before class begins she will chat and joke with the students to get them to feel comfortable and laid back. When class begins the atmosphere and attitude of the students and Bach does not change very much. It is always laid back. This is what Kelly Schackmann, a first-year student of Bach's, enjoys about Bach's class. She says,



Professor Betsy Bach

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*"Bach also believes that the classroom should not stop 'at the door.' She wants the students to think not only about things in the classroom, but to also think about things that are happening all around them."*

(See BACH, page 4)

## **Bach**

*(Continued from page 3)*

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*“Bach believes that an instructor doesn’t necessarily have to be an authority figure to the students in order to be effective.”*

“Bach is very laid back, approachable and friendly.” The open-discussion format of the class is what helps Kelly learn the best. The class is able to openly discuss the materials that are being covered. They will ask questions and other students will speak up to help them. Bach sparks these discussions by asking for the opinions of the students when a question is brought up. She will then let them debate back and forth about that question as well as others that come about from the debates.

Bach believes that an instructor doesn’t necessarily have to be an authority figure to the students in order to be effective. She says

to relax, be real, and most of all be yourself. It is okay to be able to laugh with the students. It will help in relieving some tension, or uneasiness, that may be present between the student and the instructor. As an instructor you don’t always have to be somber or strict. Have some fun with your job. Bach also says that you need to see yourself as a source of knowledge. Always be prepared. A student will be able to notice if the instructor is winging something or not.

## **Intellectual Skills**

*(Continued from page 1)*

There is a good deal of evidence that strongly supports the role of metacognition in improving problem solving success, and educational researchers and theorists believe that an underlying factor is the accompanying development of higher-order thinking skills.

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*“Our role as instructors is to provoke students to think about their thinking processes.”*

Our role as instructors is to provoke students to think about their thinking processes. Metacognition can be induced by simply asking questions. “How did you know how to approach that problem?” “What did you first think when you read that question?” “What parts of the readings helped you the most in your argument?” Questions such as these help students to reflect on their thinking processes. It stretches them beyond simply seeking the answer, and it pushes them toward a higher level of mental processing where they reflect on how they can decide on how to approach a problem that has no immediately apparent answer.

### **Bridging**

Bridging is the process of extending a newly learned or modified thinking skill to a context

other than the one in which it was initially learned. Adey and Shayer say that “when bridging is designed for the generalization of formal operational schemata from specific activities in ... science, the process increases the depth of insight the student has into chemistry, physics, or biology, as the case may be.” They believe that there are two ways of achieving this goal: “(a) the development of new contexts specifically for the practice of a reasoning pattern first met in a special ‘thinking’ lesson, and (b) the recalling, while in a regular school lesson, of the applicability of a reasoning pattern previously developed.”

The practical application of bridging is to find new contexts for students to apply a targeted thinking skill. Remember that higher-order thinking abilities are skills, and skills must be practiced in a variety of contexts to become robust. An easily-applied example of bridging is to ask students to find other examples in their lives to which a specified thinking skill can be applied. Let’s say that you just concluded a lesson in which the featured

*(See INTELLECTUAL SKILLS, page 5)*

## Intellectual Skills

(Continued from page 4)

formal thinking skill was the probabilistic character of natural relationships. After you help students see how this skill is applied in your discipline, you can then ask them how the same thinking process is applied in other disciplines that are previously familiar to them.

### Summary and Conclusions

Research studies give strong evidence that the incorporation of the following six features into a course curriculum will have positive long-term lasting effects on the thinking abilities of the students who fully participate in the course: (a) duration and density, (b) concrete preparation, (c) cognitive conflict, (d) construction, (e) metacognition, and (f) bridging.

To briefly summarize the series, the duration of an individual thinking-skills-oriented treatment need not be excessive; quality is most important. The treatments must occur repeatedly over a long period of time, however, because permanently improved thinking skills must be strongly rooted to be generalizable and robust across content areas. Before we ask students to do higher-order thinking, the content about which they are thinking must be familiar. Vocabulary, in particular, must be securely in place before a learner can think about complex issues associated with the terms. At the core of a thinking-skills-oriented curriculum are events designed to generate cognitive conflict, the presentation of information that conflicts with what the learner already knows. This conflict is followed by guidance that assists the learner in constructing new, improved thinking patterns that fit the facts better than the old ways of thinking. To make these improved thinking skills generalizable to new contexts, a learner must be able to have a conscious mental representation of the skill and a name for it. We must help students consciously think about these thinking skills whenever they

employ them. Additionally, the greater the variety of contexts in which thinking skills are employed, the more robust and transferable they become.

As tempting as it may be for us to pre-package and summarize the body of knowledge in which we have expertise for easy digestion by our students, we must resist this song of the sirens and provide our students with the opportunity to mentally process the information for themselves. Thinking skills cannot be learned by one who does not practice thinking. As instructors, we must realize that such skills develop through meaningful practice, and we must construct our curricula accordingly. We need to ask, "What will my students retain from this course five years from now?"

Our jobs as instructors require us to do more than teach geology, drama, accounting, anthropology, or any other type of content. Since we have all been trained as researchers in our content areas, we naturally get caught up in the concepts, facts, and applications of our discipline. However, it is essential for maximizing the potential for cognitive development in our students that we also help students look inside the minds of those who historically contributed to making each discipline into what it is today. We can delight in allowing our students the chance to rediscover the conclusions made by the best thinkers in our disciplines as they work with the same raw information and then use their own minds to practice the thinking skills characteristic of the experts in our disciplines. This approach certainly reflects the true meaning of a liberal arts education, one where students learn the patterns of thinking representative of a variety of disciplines. This is the only way we can facilitate the development of the freedom of the mind necessary to live life at its fullest potential.

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"... the primary goal of instruction is not merely to teach concepts, but to teach students how to change old concepts and construct new ones when appropriate."

*A. E. Lawson*

## ***Excellent Teaching***

*(Continued from page 1)*



insight of a teacher still facilitate critical thinking and aid us in the learning process. However, as simple as this objective may sound, it remains to be of fundamental importance and can be one of the hardest things to accomplish as a teacher.

After realizing that I was witness to such a phenomenon, I decided to take notes. In doing so, I observed that promotion of critical thinking was dependent on three things: the student-teacher relationship, the teacher's enthusiasm for the subject, and utilization of applied learning.

At younger ages, the student-teacher relationship is perhaps the most important factor for promotion of critical thinking. It is essential for students to develop a trusting relationship with their teacher. This provides a comfortable learning environment and allows students to focus on what they are being presented with. At the college level it becomes extremely difficult to establish a trusting relationship with students. However, it remains important to take every opportunity to establish a mutual respect with students. This respecting relationship, between student and teacher, is like a business relationship. Business for both parties is better and more productive when a mutual respect exists between those parties.

This relation is further built upon as the student discovers the teacher's enthusiasm for the material being taught. The kindergarten students were only interested in thinking about the material if the teacher demonstrated a genuine interest in the subject matter. The students needed reason to believe that time spent learning about the material was worth their while. This piqued the students' interest and helped to ensure that they efficiently retained what had been presented. Again, at the college level, attracting students attention becomes increasingly difficult. However, demonstrating enthusiasm remains motivational to students and provides them with the opportunity to see, first-hand, the teacher's positive perspective of the material.

Additionally, it lets students know the teacher's interest in their learning, and serves to relieve any anxieties that they may have about the material. There exist many ways in which to demonstrate enthusiasm in the classroom. For one, having an extensive background and a working knowledge of the material remains to be the most sure-fire way of conveying enthusiasm to the student.

Furthermore, critical thinking is facilitated through the use of applied examples and hands-on learning. Application of the learning material to real-life, provides students with alternative views, and allows them to relate the material to their own lives. The kindergartners' excitement for learning increased by leaps and bounds when they could personally relate the subject matter to their own lives. Those that seemed uninterested and distant were suddenly interested and participating. This use of example increases interest, focus, and motivation, and applies directly to students of all ages. Additionally, students are provided with even more reason to develop a personal taste for the subject. Applied learning can take on many forms, including stories or anecdotes, group projects, field trips, and most importantly, simple real-life explanations or examples. For instance, the kindergarten class had the opportunity to participate in hands-on learning projects, such as growing plants, taking care of animals, making apple sauce, and doing art projects.

In conclusion, the essentials of successful teaching are simple. Just as educational foundations are being laid in kindergarten classrooms, we continue to learn and become aware throughout our lives, and as we do so, the fundamentals remain unchanged. Successful teaching is engaging students to think critically about the material they are presented with. This enables them to develop an appreciation or awareness of the subject. This is best achieved by first developing a mutual respect with students, secondly, by building up that relationship with enthusiasm, and finally by applying the material to students lives.

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*“Successful teaching is engaging students to think critically about the material they are presented with.”*

## 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](mailto:cte@selway.umt.edu) if you are aware of information that can be presented in the next issue of Mediated Learning.*

The Carnegie Corporation of New York is interested in assisting with teacher preparation programs. They have a *Teachers for a New Era* initiative that seeks to reform education programs. A small number of large grants will be made to select institutions, but they “will continue to make grants in other areas of promising opportunity and in ways that support the rationale and design principles of *Teachers for a New Era*. Particular attention will be given to exemplary proposals that strengthen teacher quality through inservice education or alternative certification.”

Due: Anytime

<http://www.carnegie.org/sub/program/education.html>

The Spencer Foundation awards grants to “provide funding for investigations that promise to yield new knowledge about education in the United States or abroad.” Their Major Research Grants program provides funds for projects in the \$200,000 to \$500,000 range, generally for about three years. Titles of grants awarded in 2001 include: “Creating Diverse Learning Environments” and “Mathematics Classrooms: The Learner’s Perspectives.”

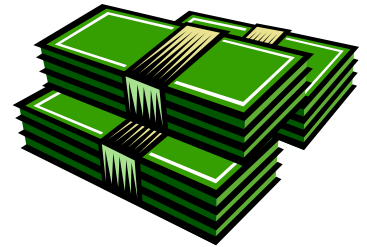
Due: Anytime

<http://www.spencer.org/programs/index.htm>

The Pew Charitable Trusts point out that in the year 2000, for the first time in recent history, the United States fell to fourth in the world in the proportion of the young population attaining a baccalaureate degree, lagging Norway, the Netherlands, and Great Britain. They are presently considering requests for “Educating the general public and improving the quality and availability of national and state data about higher education performance in the areas of access, preparation for postsecondary education, affordability, rates at which students complete degree programs, benefits returned to the states for their investment in higher education and student learning as a result of education past high school.”

Due: Anytime

[http://www.pewtrusts.com/grants/grants\\_item.cfm?image=img3&program\\_area\\_id=3](http://www.pewtrusts.com/grants/grants_item.cfm?image=img3&program_area_id=3)



The Henry Luce Foundation awards grants to institutions of higher education that “may address issues of shared concern for American higher education or may be compelling for intellectual or institutional reasons.” Recent grants include a three-year \$405,000 grant to the Center for Educational Innovation “to support the Preparing Urban Scholars Program” and a two-year \$500,000 grant to The City University of New York “to support the Teaching Opportunity Program.”

Due: Anytime

<http://www.hluce.org/4heddefm.html>

### Faculty Strategy Session An Open Forum on Technology, Teaching, and Learning Thursday 2 May, 3:30 - 4:30 PM Mansfield Library 283

The members of the Technology and Learning Collaborative invite all faculty to an open forum to discuss issues related to instructional technology. Come and learn about the training opportunities, facilities, and support services available on campus. Be inspired by colleagues who have successfully integrated technology into their UM classes. Raise questions and offer suggestions on the types of projects you want to engage in, the resources and services you need to make those projects succeed, and any other concerns you have about technology in the classroom. The TLC wants to offer the highest level of support to the faculty of UM, and we need to hear from you.

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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.

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