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ABSTRACT

This annual serial volume contains 20 articles offering practical pedagogical ideas from faculty at New Hampshire technical colleges. Section I, "Knowing a Thing," includes "A Rider Teaches Writing: Thoroughbreds and Freshmen," by Barbara Dimmick; "Some Thoughts on How To Incorporate Multimedia in Your Course," by Joyce Schneider; "Community Service--From Critical Thinking to Critical Growth," by Denise J. St. Cyr; "International Exchange of a Nursing Student," by Nancy Demers and Jeannie LeMoine; and "Respect," by Norma L. Forbrich, discussing the ways in which speech patterns convey levels of respect. Section II, "Teaching," features "Transitions," by Susan M. Perry, examining a program in interactive classroom techniques; "Using Control Theory To Change the Behaviors Associated with Performance Anxiety," by Jo Ann Clifford; "Do I Need This? Implications of Competency-Based Education for Learner and Educator Roles," by Neal Steiger; "Instructor Development: The Shift to the Adult Education Paradigm," by Norma L. Forbrich; "Poster Presentations for Senior Nursing Students," by John D. Colbath; "Raising Standards and Increasing Confidence: A Cooperative Approach to Teaching Writing," by Marion Schafer and Milt Camille; "Mastery Testing," by Denise S. St. Cyr; "Practice Learning: Teaching Students To Learn in the Workplace," by Walter Ryan; "Learning for Life," by Sandy Cole; and "Students as Text," by Nancy Marashio. Section III, "A Certain Art," includes "What Transformations Has Taught Us," by William V. Wheeler, describing an innovative course; "'Will This Be on the Test?': A Few Nuts and Bolts for Applying Critical Thinking During the First Week of Class," by Gene Rice; "Science is a Verb," by Tom Gorka; "Hyper Learning in the Electronic Classroom," by Doyle V. Davis; and "Designing Questions To Help Students Peel Back the Layers of a Text," by Paul Marashio. (MAB)

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"Not only is there an art to knowing a thing, but also a certain art in teaching it."

Marcus Tullius Cicero
(143-104 BCE)

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PEDAGOGY JOURNAL

New Hampshire Technical Colleges
and Institute System

PREFACE

Transforming Pedagogy From the Teaching Paradigm To The Learning Paradigm

Paul Marashio
Pedagogy Committee Chair

Like a chameleon Pedagogy - the art and science of teaching- is always changing, always adapting yet always a chameleon. The practitioners-contributors writing for this volume of "Pedagogy Journal" offer practical pedagogical ideas spanning from the age-old student-teacher dialogue to the progressive student computer interaction. These practitioners of the art and science of teaching convert pedagogy away from teaching toward learning. According to the contributors, students learn best in a well structured interactive learning environment where students are actively engaged intellectually. In a world where rapid change is the norm, such learning how to learn is an invaluable skill the graduate can independently exercise beyond the ivy walls.

The Pedagogy Committee's Board of Editors extends a sincere Thank You to the contributors to this inaugural volume of "Pedagogy Journal" and to Commissioner Jeff Rafn who willingly put monies where his convictions lay. An excited Pedagogy Committee is convinced the readers will be inspired and, we hope, motivated to implement one or several of these tried and tested pedagogical strategies. Over our many collective years of teaching we continue to learn the many ways of teaching learning.

INTRODUCTION

CAUTION: PARADIGM UNDER STRESS! This should be the sign on the road to educational reform. By now, most of us have at least heard about paradigms. We understand that major social systems have underlying paradigms that govern our actions, opinions, and view of the world around us. These paradigms establish boundaries and limits that can (frequently unknown to us) prohibit us from being able to make fundamental changes in our social systems and our individual actions. Paradigms change, however, sometimes abruptly, always irrevocably. These paradigm shifts are the equivalent of earthquakes in the social fabric of our community. Like earthquakes, the time, nature, and results of these shifts are often unpredictable. We do know that shifts will occur and are becoming more adept in measuring stresses on existing paradigms that portend the oncoming shifts. Understanding these stresses and preparing for the shifts can mean the difference between a cataclysm or a constructive realignment for an individual, organization, and/or community. Current demands for educational reform are reflective of stresses on the current paradigm governing our understanding learning and teaching. Knowing what is creating these stresses will both convince us that indeed the paradigm is about to or is changing and may give us some clues as to what the new paradigm may look like.

There are at least five phenomena that are stressing the current educational paradigm: (1) the transformation from national economies to a global economy, (2) the changing organization of work, (3) the growing diversity of students, (4) the demand for more accountability, and (5) the emergence of fiscal austerity. Any one of these will create pressure for change within the existing paradigm. Collectively these phenomena suggest a paradigm shift.

The transformation from national economies to a global economy has been widely recognized and discussed. The emergence of multi-national firms erases national boundaries, weakens the ability of nations to control their own destiny, and fuels economic trends that impact every individual. The quality of life for persons within each nation will depend on the manner in which that nation participates in the new global economy. A key question is whether the nation is prepared to provide an environment that fosters high skill, high wage jobs or one that focuses on low skill, low wage jobs. The United States has a quality of life that can only be sustained at its current level by fostering high skill, high wage jobs. It must do this in a global environment that includes many other nations that are competing for these same high skill, high wage jobs. Among other things, the American paradigm of education is forced to

compete with other national paradigms of education. We can no longer be satisfied with an American educational paradigm that provided a sufficiently educated work force to fuel one of the strongest economies in the world. That is the past. Now we must assess the success of the American educational paradigm against the success of others in preparation for the future.

The Tayloresque organization of work severely limits the flexibility and innovation needed to successfully compete in the twenty-first century. Competitive firms have begun to reengineer themselves into high performance work entities. This has resulted in a demand for line workers who can creatively solve problems, make decisions, exercise leadership, motivate teams, and successfully negotiate with their peers. Segregation and specialization are making way for integration and generalization. Successful businesses are transforming themselves into learning organizations. Thus, their workers are constantly learning and growing. Educational systems that were structured to prepare persons to live and work in a segregated and specialized environment mirror that environment. That structure is increasingly at odds with and incongruous to preparing persons to live and work in highly integrated, holistic environments. Is it any wonder, then, that the level of dissatisfaction and the concomitant demands for educational reform has grown?

The need for a more highly and continually educated work force has diversified the student population as never before. No longer can significant segments of a society's population be denied access to education or allowed to languish among the unskilled. According to the U.S. Bureau of Labor Statistics, only 15% of the work force will be in unskilled jobs. Thus, the education system is being called on to educate, re-educate, and continue to educate everyone. The education system of tomorrow must become not just equal opportunity, but equal success. Given that the current American educational paradigm is designed and focused on sorting and classifying as opposed to bringing everyone to an acceptable level of education, achieving equal success will be stressful indeed. The availability and increased capacity to deliver information allows for increased public demands of accountability. With our quality of life at stake, individual and/or systemic failure approaches catastrophic levels. The success or failure of our educational institutions will determine our quality of life for years to come. The resultant increased attention to the quality of the American educational system buoys the spirits of those who work in the system, but at the price of increased scrutiny and accountability.

The globalization of the economy is resulting in a redistribution of wealth. The lion's share of the global wealth enjoyed by the United States is now being claimed by many other countries. As a result, this country must learn to do more with less. In order to maintain our standard of living, we must increase our productivity. Increasing capacity through expansion of less productive systems will no longer generate the wealth needed to fuel our standard of living. It is no surprise, then, that all sectors of our society, public and private, are demanding and creating more fiscally austere enterprises and policies. Clearly, this is reflected in the on-going budget battles in the education sector of our country. Education is faced with the long term reality of the need to provide more education to more people more successfully without a concomitant increase in fiscal resources.

These five phenomena are among the stresses that will topple the current American educational paradigm and result in a paradigm that supports the world of tomorrow. This journal on pedagogy represents the thinking, discussion, and action of the faculty of the NH Technical Colleges and Institute System as it examines the nature of teaching and learning. It reflects the struggles, innovations, and creativity generated by a paradigm under stress. In many respects, it is the beginning of a discussion and exploration. We know or at least sense that learning must become more productive, efficient, and successful. We are talking about changing our fundamental approach to teaching and refocusing on creating learning environments. For many, this is both frightening and exhilarating; for others it is just plain frightening.

My hope, as Commissioner of the Technical Colleges/Institute System, is that the explorations, examinations, and ruminations of the writers of this journal will serve to inspire others to join the debate that will shape all education in the future. Perhaps as a result of this journal others will come forward to help us learn how to create successful learning environments. Perhaps because of this journal we will be challenged to examine our assumptions that undergird the way in which we go about educating. Perhaps because of this journal we will create and shape the changes that are inevitable.

I commend each and every contributor. They have bravely stepped forward to lead us to the future.

Dr. H. Jeffrey Rafn
Commissioner

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Section III — A Certain Art

Section I

KNOWING A THING

A RIDER TEACHES WRITING:
Thoroughbreds and Freshmen

Barbara Dimmick

When I began my master's degree and at the same time began teaching my first section of composition students, a senior faculty member was assigned to me as a coach. Her first question was whether I had ever taught before, and my answer was yes: I had been on the faculty of one of SUNY's two year agricultural and technical colleges. But, I told her, I hadn't taught writing. I had taught equine science. She waved off my objection: all that mattered was that I had been in the classroom.

I floundered badly that semester, and whenever I recalled my stint of teaching stable management, equitation, and basic horse training, little of what I had done there seemed to help my students write better. When I thought even further back, to the five-time Olympic coach who had directed the school where I had studied for my certification as a riding instructor and horse trainer, I found that what he had said about teaching was of no use either: Your student will perform only if he is more afraid of you than he is of his horse.

In those first years in the writing classroom, my teaching steadily improved. I learned in all the usual ways: discussing my work with colleagues, reading journal articles, begging at times for advice, and batting ideas around with fellow writers. And then, after four years or so of teaching — four years during which I often had to explain how a horse trainer had ended up in a writing classroom — it came to me that my graduate school supervisor had been wrong. It wasn't my time in the classroom that could inform my teaching; it was all the hours I had spent schooling horses that could help me more deeply understand my work. Hours in the classroom, tips from colleagues, and journal articles had offered me skills and the perceptions of others. What I needed was an ethic, a philosophy, and I discovered mine in classical riding.

The principles of classical riding were expressed simply and eloquently in 400 BC by Xenophon. To non-riders, Xenophon is a Greek historian and statesman; to riders, he is the author of a stunningly perceptive treatise on the philosophy, principles and techniques of training. The following passage is an old favorite among well-read horsemen, and it lies at the heart of his approach: "Anything forced or misunderstood can never be beautiful....If a dancer was forced to dance by whip and spikes, he would be no more beautiful than a horse trained under similar conditions."

A horse performing a dressage test or competing over a course of fences has much in common with a student turning in a paper. It is not merely the moment of completion of the paper itself which matters: it is preparation, fitness, skill, willingness, and heart which determine the performance.

Other similarities abound:

Horses do not ask to be schooled, and most often, students do not volunteer for first semester composition courses. Both must be taught a new language: horses the physical language of equitation, students the language of rhetoric and writing process. Both must learn if not to love then to accept their work. Both must balance their own nature with the demands of the task at hand. Both are easily frightened and yet both must grow confident about their performance. Both must work hard, and yet not grow discouraged.

Xenophon articulated several principles which lie at the heart of classical riding. Although he developed an aesthetic which describes how horses, and therefore their rider-trainers, should perform, much can be inferred about students and their teachers.

The first principle in schooling a horse is that it must travel freely forward. The horse that hesitates, is timid, or is reined in or spurred on by its rider fails to meet this requirement. One rule of thumb when advancing from one level of training to another is that forward motion shall never be sacrificed. If the horse cannot perform a new movement without checking its pace or adopting some weird posture, the horse is being advanced too quickly.

The immediate corollary is that the horse must travel forward with impulsion and with a regularity of pace. Impulsion refers to the energy which carries the horse forward, but regularity requires that the horse have cadence, rhythm, and control. Free forward motion, with regularity, is often defined by riders as the horse's ability to "carry itself". This is the horse that moves with energy, which has brilliance in its maneuvers, which neither hesitates in front of nor rushes at its fences. There is an incredible majesty in the horse which carries itself and travels both with freedom and with cadence. This is the horse that catches one's eye not only for its beauty but for its apparent ability to perform whatever might be asked.

The third principle of classical riding is that the horse travels in balance. It divides its weight equally among its four feet. A horse in the wild travels with most of its weight on its forequarters, only shifting to foursquare balance when threatened and therefore about to run. The schooled horse, however, has learned to balance itself quietly and calmly so that it is prepared for anything the rider might ask.

The final principle is that the horse always looks in the direction in which it travels. It looks head on at its fences. It looks "straight through" its bridle. It looks forward down the trail.

The well-schooled horse sounds a lot like the ideal student: The student who comes with her own energy to learn. The student who "carries" himself without leaning on his teacher. The student who has achieved balance between her home life and school, between one course and another, between mind and body. The student who examines, looks head on at every one of his assignments and who neither rushes nor procrastinates.

The well-schooled horse, however, comes to be well-schooled, according to Xenophon and according to my experience and that of countless other riders, through the behavior of the rider-trainer.

One of the first principles the rider must understand and follow is that she never tells a horse what to do: she never orders, commands, dictates, but always "asks". To tell is to violate the horse's free forward momentum; to ask is to direct its natural energy in the way the rider has selected.

Asking for a performance follows a certain protocol and has its own guiding principles, many of which, by simple inference, create a valuable teaching ethic.

The first is that the rider must know exactly what she wants: a canter, a half-pass, an extended trot. The task must be clear in the rider's mind, it must be expressed clearly to the horse, and the rider cannot change her mind halfway through the performance and risk confusing or taxing the horse.

Second, the wise rider sees a particular movement in its larger context; a warm-up exercise which leads to the free gallop that will be asked for later in the session, the flexion exercises which prepare the horse for dressage movements five years in the future.

Third, actually asking for a performance is done in a particular, prescribed way, following yet another principle called the "progression of the aids".

The progression of the aids means that the rider asks the horse first with the gentlest and least visible aid. The rider begins with a slight shift in weight; from there, if there is no response, he moves gradually on to the use of calf, heel, whip, spur, and voice. There are two reasons to follow the progression of the aids. One is simple kindness: why kick a horse that will respond to a lighter touch? The second has to do with the philosophy that a rider seeks to draw attention to his horse, not to himself. The less visible the rider, the more prominent the success and beauty of the horse.

In writing classes, the progression is subtle but evident. Once the general idea of an assignment has been presented, students break away and begin to write as soon as they are ready. Some students begin at the first hint of a new assignment. Others require in-class prewriting, detailed explanations, examples, extra help in conference, even the threat of penalty for missing a deadline or the consequences of failing the course altogether.

At this point, the concepts of punishment and reward come into play. What if the horse ignores the rider? What if it refuses to perform? Conversely, how does the rider behave if the horse does perform?

Punishment and reward have specific meanings in the context of classical training. Punishment is simply the repeated asking for a performance. Technically, the horse which does not canter from the seat, and instead requires the use of the calf or heel is "punished" by the more severe requests. If it still refuses, it is asked again and again until it performs. And that is all punishment entails. It has nothing to do with the rider's pride, power, frustration, or annoyance. It is simply a matter of asking and asking, in more and more undeniable ways for the horse to perform as requested.

In addition, all punishment is seen in context of the basic principles laid out for the horse. The horse that bucks is not punished for bucking; it is punished because, when bucking, it fails to travel forward. The horse that leans on the bit and on rider's hands is punished because it is not carrying its own weight. The horse that bolts is not traveling in rhythm. Punishment is often described in ways that are familiar to some who teach: the horse has been asked. If it has been asked clearly and correctly for what it can perform and has failed to do so, it has therefore made a choice. The wrong choice results in punishment: it will be asked again and again until it performs. The horse is never told what not to do, only asked for what it should do.

If punishment seems rather bloodless and unemotional, as it should be, reward too loses its emotional charge. Reward, in classical training, only means that the horse has performed, that the rider therefore has stopped asking, and that the horse and rider are once again traveling forward in harmony. Nervous horses, or horses who have worked especially hard or well, respond to having their necks stroked, or being spoken to, and most people who ride take some pleasure in feeding treats to their horses. But there is a danger in reward which goes beyond harmony and forward motion: the horse can come to expect or demand treats and it will see the treat, not the performance, as the goal. I once schooled a young horse who had grown so fond of petting and reward, that if I so much as spoke to her in a tone of praise or patted her

neck, she ploughed to a halt, arched her neck, and preened. Work didn't interest her; she was solely focused on reward. (The similarity here to student fixation on letter grades is so great it needs little explanation. Often when I return papers with letter grades, I am reminded of this chubby, tub-footed mare who alternately preened and sulked, and did as little honest work as possible.)

There are a hundred other corollaries which can be drawn between schooling horses and teaching writing, and many riding aphorisms apply equally to teaching; Always end a schooling session on a good note. Be aware of the horse's mental state and the variables of the environment. Be kind. Be clear. Be consistent. Be patient. Distinguish between what is challenging and fair and what is impossible.

I schooled horses and taught riders throughout my college summers and then fulltime until the age of twenty-five. Since then, I have had a few part-time jobs riding young horses, and over the years, I have come to see that several points of wisdom, very much in keeping with the classics, contribute to my teaching ethic.

The first is that the horse must always be up to the task. Not every horse has the potential to be a Grand Prix dressage horse or to compete at the National Horse Show. One responsibility that falls to the trainer is never to ask the impossible. Nearly every horse has its niche, and the responsible trainer tries to find out what it is and then to school, sell or trade the horse accordingly. Setting a horse at a fence it can't possibly jump is an act of cruelty. Then, if it fails to jump, setting the fence higher and higher would be close to monstrous. In the end, the horse will fail, fight, or give up; it will learn to hate and fear all fences rather than distinguish those fences it can jump from those it can't. Teaching a class which includes students blatantly unqualified for the work at hand is just as cruel—never mind making assignments which grow more difficult from week to week.

Second, it's of great value to teach the horse what is universal. There is a standard code of stable manners and a relatively standard code of equitation aids, and teaching these to a horse will prepare it for the future. Only rarely does a horse live out its entire life with one owner, but if the horse has been taught what is practiced and accepted universally, it will adapt more easily, learn more easily, and generally receive better treatment and higher regard wherever it finds itself in the future. The horse which has been taught its rider's own secret, made-up, or idiosyncratic aids will generally suffer confusion and often punishment when it moves on to its next rider.

Third, when things go wrong, the rider must fairly assess who's at fault. The school where I studied for my professional certification applied a stringent standard to all performances: the horse was given all the credit; the rider took all the blame. Certainly this is somewhat extreme, but it taught us one important thing: the rider never blames the horse until she analyzes her own actions. The wise rider knows when to punish his horse, but also when to apologize.

Finally, riding, and I would argue teaching, is a state of "quiet readiness." One should know all there is to know about horses: physiology, instinct, psychology. One should understand the principles of riding, the context of one's work, and how the little skills, the geometries of the arena, and the shape of the fences contribute to performance. One needs to know oneself: one's fears, one's dominant hand and leg, even how to slow one's heartbeat when sitting on a frantic horse. But it must be a quiet readiness, a preparedness for the disasters and the tragedies, an openness to the joys of small successes, a way of knowing as much as one possibly can, but remaining a partner to, not master of, one's horse. The goal of the classical rider is to foster the best development of the horse, to augment its natural ability, to bring out its intelligence and athleticism: not to appear all-knowing or to overwhelm the performance with one's own presence. And teaching is much the same: one hopes to bring out the best in one's students and in the end to stand quietly in the background as they travel forward in their lives and in their education: balanced, confident, and skilled.

SOME THOUGHTS ON HOW TO INCORPORATE MULTIMEDIA IN YOUR COURSE

Joyce Schneider

As Learner Services Coordinator, I am part of a team that makes up the Department of Instructional Services at NHTC, Claremont. Two years ago when I joined the Department, there was only one other person in the department, Jo Ann Clifford, who had already ordered five Macintoshes and two IBMs for the new Learning Assistance and Advisement Center (LAAC). After talking at length with system fellow Doyle Davis about the future of multimedia in post secondary education, she decided to develop a small computer center in the LAAC. The computers would use the new technology in troublesome content areas, in basic skills, study skills, and in learning preference assessments. The focus of the LAAC would be to offer alternative learning to all students at the college, from remedial to the gifted and talented.

For over two years, our department, as well as a small group of faculty from several programs in our institution, have been collaborating with Doyle Davis, gradually learning about multimedia and experimenting with how to develop and use this technology as a learning tool. Our department has sponsored and participated in several hands-on workshops to learn and to teach the fundamentals of this new technolog . After these workshops, we have gone off to think about what we have learned about multimedia and how we can adapt it to our students' needs in our programs, courses, seminars and centers. For most participants, this commitment has led to more learning through taking classes and workshops, reading educational technology magazines and journals, studying software and hardware catalogues, and talking with others who are involved in the area. What we have found is that learning to incorporate this technology in a course or college program is a process, best done in little pieces: adding to, modifying, and enlarging our scope as our expertise and opportunities continue to develop. Actually, because the technology is changing and developing so fast, this is a lifelong situation.

My main questions have been the following: What are these technologies and would they help my students to learn better? If so, how can I begin to use them? What do I need to know, and what don't I need to know? Is there a place where I can begin in a small, non threatening way? My purpose here is to describe what I have learned to date and to offer some simple steps for faculty who want to begin to use computer aided instruction (CAI) in their courses.

What is this Thing Called Multimedia?

So what is multimedia? Simply put, people learn by visualizing, listening to, and doing things, and multimedia, with its animation, audio, and interaction help people to learn. Multimedia *per se* does not mean it is expensive and looks like MTV. The advances currently available are not that different from what we know now (videos and VCRs, computer aided instruction, overhead projection) and are easily accessible. Anything, including print, that uses combined visual and audio approaches to teach can be considered part of the multimedia tools. This means that a realistic step toward incorporating this technology into the classroom and lab could be through the use of one computer capable of running multimedia programs.

I came to my job here somewhat computer literate from the training I had had in the 1980s. I knew how to do some programming, how a computer worked and how it could be used as a word processor, number cruncher, and data base. I had taught students how to use word processing software to write English papers, and had used what's called customizing software, programs that allow the instructor or students to create drill-and-practice programs for grammar and vocabulary skills development. When Jo Ann talked about using computers and multimedia in the LAAC as one tool to help our students become independent learners, I was very interested and thought that I had a grasp on what she was talking about. However, what I have realized over time is that there is a lot more to learning about multimedia than I had originally thought. However, I have also discovered that it is possible to use this technology, little by little, as I learn it. For me, this process is much like peeling an onion; once I remove one layer of ignorance or inexperience, I discover many more layers to learn about.

The first thing I needed to do was learn what this technology was and see what it could do. Multimedia uses more than one medium (e.g., text, audio, still pictures, animation, video) to direct the students through a lesson. Often these products are also interactive, allowing the user to pick and choose from a variety of information options. Through participating in Doyle Davis's hands-on-workshops, reading, watching others, and playing with some of our CAI software, I discovered that the multimedia technology itself wasn't so frightening after all. I already was familiar with text and still pictures on a book page; I was used to animated pictures and audio on videos; I could take pictures with a camera and knew how to film with a video camera; I knew how to operate a VCR, a computer, and an overhead projector; CD-ROM discs

(Compact Discs-Read Only Memory with sound and pictures) and CD drivers looked like those in the music stores; and laser discs (with sounds and pictures) looked like a large record. Even electronic books are "books" that are read and experienced on a computer, with or without an interactive element.

Steps to Use Multimedia in Your Course

Once you understand what these technologies are and you want to use them, your next challenge is to decide how to incorporate them into your course. As mentioned before, this could be as simple as using one computer capable of operating multimedia software in your classroom and/or lab, or as complex as using a large computer lab.

This year when I attended the Winter Institute for Learning Assistance, I saw a number of presentations on the uses of multimedia in the developmental classroom and computer lab. David Caverly, who is coeditor of the "Techtalk" column in the *Journal of Developmental Education*, spoke about what he and his coeditor Bill Broderick identify as the steps involved in designing a developmental education computer center, and steps that also work for courses:

1. Define your instructional model. Do you believe in skills-based or holistic education?
2. Conform 3 possible functions of the computer to that model. The functions are the computer as tutor, tool, and tutee.
3. Select software to perform the chosen functions.
4. Select hardware to deliver the software.

I have found the following concepts in steps 1 and 2 to be very thought provoking as I have tried to make sense of what these technologies are and how to use them in the classroom and/or lab.

Step 1: Do You Use a Skills Approach or a Holistic Approach?

First, consider your instructional model. If yours is a skills approach to education, you will emphasize learning discrete items in isolation, such as memorizing lists of terminology, learning and practicing a spelling rule, converting measurements from English to metric and then back again. A holistic approach, on the other hand, integrates the learned skill with other skills: terminology is learned in a conceptual context, a spelling rule is tied to a word processing writing assignment, metric conversion is applied to a medication

situation in a nursing course. An approach is holistic if it allows students the opportunity to use a skill as they learn about it. A holistic approach also teaches and provides skill practice in an authentic context, and leads students to discuss how they understand the process rather than the product. Most CAI software available is designed to be used in a skills curriculum; however, an instructor can use this existing software in a holistic manner if it meets the above holistic approach criteria.

One example of holistic instruction is software used in a multimedia approach to education: that is, a focus on learning done on a system composed of a computer or group of computers, a laser videodisc player, a VCR, a sound system and/or a CD ROM disc. An increasing number of multimedia programs are being published for postsecondary educators. It is also not too difficult for instructors and students to develop software for their courses. Doyle Davis has called this hardware configuration, set on a table with wheels, a "MIP" or Mobile Instructional Platform. Upon his suggestion, our department is in the process of developing two platforms for college programs to use in the classrooms and labs.

Step 2: Conform the Computer Functions to That Model.

The computer functions are tutor (where we have been), tool (where we are now) and tutee (where we are going). When the computer is used as a tutor, the focus of learning is the **computer**. Information comes from the machine to the learner. As a tutor, CAI functions like a teacher's aid, doing what you tell it to do. Research studies are showing that generally CAI is effective for achievement, learning time and attitude toward technology, especially in math and study skills. While it can be good as an additional tutor to what we do in our courses, generally using CAI to only practice drills rather than to develop critical thinking skills is questionable for transfer beyond the computer, particularly in reading and writing. There are some disturbing negative trends using CAI only as a tutor. It tends to widen the gap between the wealthy and the poor because CAI used only as tutor doesn't help students draw better inferences or apply higher skills to new situations in the real world. It emphasizes simple lower level tasks versus higher level tasks. Too often in our institutions remedial students (mostly minorities, females, and the poor) never get time to use higher cognitive skills; they get drills while higher students practice higher metacognitive skills. A much better way to use CAI is to use it holistically. We need to do debriefing activities after the skill has been prac-

ticed. Teachers need to talk about what the students did, why they did it, and how they can use that skill in the real world.

Currently educators are beginning to realize that using the computer only as a tutor is a thing of the past and that new ways to use the computer need to be added. A more current computer function is as a tool designed to make life easier. In most cases, it is just electronic versions of things that have been used all along; the difference is it is faster, smoother and more adaptable to people's needs. Word processing improves writing and reading (quality and quantity), particularly if done collaboratively. Databases improve processing of large groups of information. Simulations improve problem solving in math and science. Using presentation packages, students can take ideas generated in class and rearrange them, simplify them, outline them, make sense of them. When using the computer as a tool, the focus of learning is through **discussion** and takes place with visual presentations in a lecture or with groups around the computer. Constructing knowledge through exploration and organization of ideas is at the heart of the benefits using the computer as a tool.

The future and perhaps highest computer function will be the computer as a tutee. Tutee is the term used for a person who is tutored. Using the word tutee for a computer function implies that the student has the knowledge and acts upon the computer. With the computer as tutee, the focus of learning is **process**. Students will learn from and produce multimedia programs. With multimedia delivered on CD-Rom or laser videodiscs (discs with even more sound, pictures and/or video), students can explore a variety of information in the way they want to do it. Information can be explored like a landscape; students can bounce around the program learning as they go along. For example, on the screen there is a window that is showing blood being drawn while the instructor talks about the process. Next to the window there is text discussing the process. During the presentation the student clicks on a term in the text to get a definition. Halfway through, the student puts the presentation on pause and opens another window on the screen which is a word processing program. The student writes up part of a lab report and then closes the window and continues the presentation. Learning through multimedia is a process along the paths taken. Students need to know where they go on these paths, why, when and where they have been. Therefore, the process becomes a way of exploring ideas and documenting them.

The most exciting power of using multimedia, however, will be in students creating their own software that can include tutorials, quizzes, and/or simulations for presentations and projects (using the computer as tutee). When

students learn how to make multimedia programs, it allows for collective learning. It involves oral and group skills, reading, writing, and problem solving. In reality, teaching students the skill of learning as a process involving multiple skills is more important than creating the software itself. Tutee software is available now that helps students make this type of presentation with a video camera.

In the information age, power will be based on the control of information, not on the control of land. It makes sense to encourage students to use the computer as a tool and as a tutee because multimedia and telecommunications are taking over in the world. Students will be taught to be information brokers to be successful in tomorrow's workplace. As information brokers, they will need to be able to search for information and ideas, to access it and to share it. Those who are literate, who have information and can access, it will be able to teach people how to be information brokers. They will use telecommunications to seek information a) person-to-person (E-mail), b) person-to-computer (ERIC, library), and c) computer-to-computer (Internet). Students will have to explore ideas and document them using writing, reading, and math skills.

How can teachers integrate multimedia, and even telecommunications into their classrooms and/or labs? They need to realize that to do so is in itself a process and that it is easier to begin in a small way, to try one little "piece" at a time. They need to look into what these technologies are, see what they can do, and think about what their educational approach is. They need to think about what computer functions they think would fit their classroom and lab activities. They need to look at what other instructors are doing in software design and in course design. Finally, they need to think about what their roles would become as instructors using multimedia. One role could be as a guide to the information available, much like a filter to determine the best way to learn the material. Multimedia products are tools, and people have different learning styles. No matter how good the teaching materials are, students want to be able to have interaction. The need for people to teach each other will not change, no matter what kind of tools are integrated into the classroom. Perhaps classes will become somewhat less lecture oriented, and more discussion driven, and teachers will be the key to bringing coherence to the material, facilitating student exploration and interpretation of this material. This will create an environment in which students take more responsibility for their own learning, as they operate both independently and collaboratively with faculty and other students.

COMMUNITY SERVICE
From Critical Thinking To Critical Growth

Denise S. St.Cyr

My teaching and counseling careers have provided me with a wealth of enriching experiences as well as with a cast of some "gem quality" role models. Among these pros rank Dr. Alfred W. St.Cyr and Richard Fugere.

Dr. St.Cyr is a Superintendent of Schools in Groveton, New Hampshire and a grantwriter. Richard Fugere is a principal at Hampstead Middle School.

Both of these administrators believe that while the three R's — reading, 'riting, and 'rithmetic are vital to the process of education, so are three others — respect, relationships, and responsibility. (St.Cyr, 1991) From these philosophies was spawned this writer's own conviction that community service plays an integral part in both academic and personal arenas.

There is a demand for meaningful dialogue among educational institutions and the public and private sectors which all too frequently operate independently of each other. Public and private initiatives must be coordinated. (Sibicky, 1992) Altman and Sedlacek (1990) discuss the apparent disregard of opportunities for career exploration by some students and offer interventions to increase interest in volunteering.

There is little question that there is a crying need for community service. Clearly at no other time in history have the health, the welfare, and the economy of this nation signaled such a dire need for volunteerism.

College students can be key players. The primary importance of community service lies in the challenge that it offers. It presents a solid values foundation to its participants. Thus, it teaches that citizenship correlates to applied academics and equally important to daily living. Piaget would call this a system of living and acting operations where knowledge is not given but, it must be discovered.

Community service is a conduit to share in a multidimensional learning experience. (St.Cyr, 1993) McClam (1982) discusses the issues of motivation and rewards as they relate to volunteerism.

This author proposes that the "notion" of community service be elevated to the ranks of attitude. Students need to be taught that community service is both an attitude and a practice which go hand in hand. The opportunities to practice are boundless. Several successful strategies have been developed to facilitate this transition.

Koehler (1984) highlights the Olympia College Adult Education Volunteer Classroom Assistant Project. Students gained an intimate understanding of the giving process when they volunteered as tutors in the Adult Basic Education and English as a Second Language (ESL) programs on their campus. Koehler has authored a handbook which details tips for working with instructors. He establishes steps involved in program participation and routine procedures for documentation. Students may elect to spend their spring breaks assisting the disadvantaged of their communities. (Collison, 1989)

Kimeldorf (1990) provides instructional methods, student objectives, and tasks for the reader who is serious about instituting such a program. Clark (1983) presents the salient points of the process of community service planning from inception to placement activities to program monitoring.

Community service is now a requirement in each of this writer's humanities and social science courses. The pulse of this continuing dynamic grows stronger. While society benefits from the element of commitment, so does the student. He/she develops potentially valuable contacts for employment after graduation. (St.Cyr, 1993) Parker (1988) contends that the appeal of community service rests in its job-related aspects as well as in the possibility of receiving college credit for it.

On a purely academic level, the breadth of this issue extends to critical thinking skills which require knowledge about observation, facts, inferences, assumptions, opinions, evaluation, and viewpoints. It is a new direction. Its future provides fertile soil for the growth and development of community service.

Community service is a catalyst for change in that it transcends purely academic value. Dr. St.Cyr postulates that education is a process of growth through change. It is also a mantle of leadership.

A very rich bond can be created with education and with the public and private sectors. In essence, community service is a win-win situation for the students (the giver), for the teacher and for the recipient....all of whom are learners among learners. (St.Cyr, 1993) It is critical thinking and critical growth. ▼

The following selected sources may be helpful to the reader:

Baines, E. (1986). Volunteerism and the older adult as benefactor and beneficiary: A selective review of the literature. Working Paper Series. South Carolina: Clemson University. Strom Thrumond Institute of Government and Public Affairs.

Fitch, T. (1987) . Characteristics and motivations of college students volunteering for community service. Journal of College Student Personnel, 28, (8), 424-431.

Kelley, E. (1983). Toward a tradition of caring. American Education, 19, 23-27.

Redfering, D. & Biasco, F. (1982). Volunteering for college credit. College Student Journal, 16, 121-23.

Redmond, L., & Peaco, F. (1981). Becoming a volunteer: Resources for individuals, libraries, and organizations. (Available from the Library of Congress, Washington, D.C.: National Library Service for the Blind and Physically Handicapped).

Rice, E. (1993, January). Critical Thinking. Symposium conducted at the Tech Prep meeting at New Hampshire College, Manchester.

Virtues of Volunteering, (1984, August). Personnel Journal, 42-44, 45-48.

Wilson, B. & Rossman, G. (1986). Collaborative links with the community:

Lessons from exemplary secondary schools. Phi Delta Kappan, 67, 708-711.1 © 1994

REFERENCES

Altman, J., & Sedlacek, W. (1990). Differences in volunteer interest by level of career orientation. (Report No. 5-90). College Park, Maryland: University of Maryland. Counseling Center.

Clark, M. (1983). Building work skills through volunteering. Ideas for action in education and work. Washington, D.C.: National Institute of Education. (ERIC Document Reproduction Service No. ED 239 127).

Collison, M. (1989). For some students, spring break offers a chance to aid the needy. Chronicle of Higher Education, 35, 33-34.

Kimeldorf, M. (1990). Community opportunities: Volunteer and leisure education. A concept paper. (ERIC Document # ED 332-383).

Koehler, C. (1984). Handbook for Volunteers: Adult Education Program. Bremertown, Washington: Olympic College.

McClam, T. (1985, April). Volunteer motivations and rewards: shaping the future programs. Paper presented at the Annual Conference of the American Association for Counseling and Development, New York, N.Y.

Parker, A. (1988). Students volunteers: An endangered species? Campus Activities Programming, 20, 49-51.

St.Cyr, D. (1993). Community Service Partnerships with Education, the Public and Private Sectors. Journal of Humanistic Education, 17, 6-8.

St.Cyr, D. (1991). From textbook to community. Innovation Abstracts, 13, (26).

Sibicky, M. (1992). Motivations underlying volunteerism: Differences and similarities between student and senior citizen volunteers. Paper presented at the Annual Meeting of the Southeastern Psychological Association, Knoxville, TN.

INTERNATIONAL EXCHANGE OF A NURSING STUDENT

Nancy Demers
Jeannie LeMoine

The United States government is predicting a considerably different America by the middle of the 21st century. Minorities will account for 50% of the population. The task of communicating effectively across not only cultural boundaries of language and differing customs but also socioeconomic values and beliefs challenges the workplace and, particularly, health care workers.

Most nursing curricula include some content about the significance of cultural factors in the planning and delivery of nursing care. While useful, these strategies are primarily cognitive, and often do not provide the student first-hand experiential learning opportunities. There is increasing evidence that hands-on experiences are valuable to cross-cultural sensitivity and effectiveness. There is also the element of excitement in the classroom when a nursing student, or a group of nursing students have dual advantages to experience a different culture and to travel at the same time.

Through an opportunity with Partners of Americas, Jeannie LeMoine, a practical nursing student from NHTC, Claremont, Laconia satellite campus, successfully completed a clinical experience in Fortaleza, Brazil. The two-week nursing experience involved clinical practice with Brazilian Nursing students and University Nursing Professors as part of a linkage between New Hampshire Technical College and Federal University of Ceara. Nursing instructors of the two nursing educational facilities and the student collaborated in developing objectives in Community Health and Maternal Child Health Nursing.

The resulting objectives were:

1. To explore and to define roles and responsibilities of student nurses.
2. To observe nursing students' interaction with nursing faculty, patients, and their peers.
3. To identify the nursing students coping mechanisms in dealing with their stress.
4. To explain what opportunities for future growth are available for nursing students and graduates.

5. To examine and to define roles and responsibilities of professional nurses in practice.
6. To identify how culture and lifestyles relate to nursing practice.
7. To identify differences in nursing techniques.
8. To identify health promotion issues relevant to the people in this area.
9. To explore cultural practices related to childbearing and child rearing.
10. To examine use of folk healers and lay referral systems.

Fortaleza, the capital of Ceara, is often called the "best" state in the northeast of Brazil because it is the most developed in the northern country. It is situated in the heart of a drought area along the northeast coast of Brazil. The people of this area produce extraordinary delicate lace. There are travel difficulties for anyone traveling from the U.S.A. to arrive in Fortaleza because Fortaleza does not have an international airport. Travelers must fly from Miami to San Paula, Rio de Janeiro, or Brasilia, then the traveler must fly back up to Fortaleza, adding considerable hours to flying time.

The Brazilian University Nurses see a large community of "Squatters" through a public health project, called the "Uriquiana's Project". It is one of many very poor developments in Fortaleza. Its size is as staggering as its ghastliness of shantys of extreme poverty.

Uriquiana's public health clinic delivers health care for the mothers and children in the community. These mothers, children and infants come to be "well-child" checked, to be immunized and to have their illnesses treated. Many infants are brought in for diarrhea, vomiting and dehydration. Often, these conditions are a result of inadequate bottle feeding preparation. There is little, if any, sterilization used by the "squatters". The living conditions are, at best, minimal.

The homes that Jeannie visited did not have any electricity, any plumbing, any facilities of any kind, one or two extremely small rooms, dirt floors, and perhaps one cot like bed for the entire family. The temperatures often rise to merciless highs of 95 degrees year round. The gardens dry out, the water supply is critical, and as a result, there are many fatalities involving the very young and the elderly. These people are suffering, and death is a reality, which is difficult to accept.

Solid waste that collects on rocks and debris in the sewage ditches creates a breeding ground for rats and disease. Domestic violence and alcoholism are rampant. The community's children go to school for food and are routinely kept back in school. Teachers claim that these children are slow and unmotivated learners.

Brazilian fathers often desert these families of such extreme poverty. Their replacements are the first to suggest that the children begin to work at a tender age to contribute to their family's meager income, rather than drain the family's resources. Jeannie witnessed children, as young as 5 or 6, selling candy or fruit, shining shoes, and begging or stealing. They very often serve as drug runners for trafficers, or they prostitute themselves. They may scavenge for food in dumps and trash cans and when they do not succeed, they sniff glue to deaden their hunger and to soften their reality. Many will never set foot in a classroom and cannot even spell their first names.

In many sections of Fortaleza, Jeannie saw children attempting to sell their wares and sleeping on sidewalks, in groups or alone. She advanced that going home at night is sometimes not possible, particularly since the children may be empty handed at the end of the day. Many childrer are never seen or heard from again. Ultimately, if a child survives on the street, and home is a miserable place where an abusive stepfather rules thus, going home becomes less and less frequent.

Brazil has the largest population of elderly. These people live in their homes with their families. Nursing homes do not exist. This population is often a victim of family abuse and have multiple health problems. Many communities are now just beginning examine this issue. In one community, the local police department has developed a project to house the elderly in a shelter during the day for protection.

Jeannie visited a community project that has a "herbist" who tends to a garden filled with many herbs and fruit bearing bushes that are used in the treatment of diarrhea, gastric ailments, coughs, throat irritations and dehydration. These recipes have been passed down for years from ancestors. Herbed teas to elixirs are available to the community without cost. The herbist also assists the "squatters" in starting and maintaining their own small patch of garden at the community health center and educates those individuals who wish to participate in the preparation and medicinal benefits of herbs. These gardens play a pivotal role in the community. Short term benefits are imme-

diate for the families in helping to improve their health. Of greater importance, through making the garden produce, these people are learning to help themselves.

Jeannie was impressed with the holistic view of the "squatters" which was taken by the health care professionals in assessing the entire family, environmental effects, economic status, cultural and spiritual beliefs.

The maternity hospital which delivers an average of 2,000 babies per month, has a family planning clinic, a breast feeding clinic, an emergency room of its own, and a very busy maternity and infant care department which offers the student a wide variety of learning experiences to obtain her educational objectives.

Although education in family planning is taught to the public, there is a high rate of young birthing mothers, fourteen years of age and younger, admitted to the maternity hospital. The availability and price of birth control pills and condoms are difficult for most Brazilians. In addition to very young mothers, prenatal care is not always valued. Brazilians view pregnancy as a normal event; therefore, prenatal care is viewed as necessary only if they have an illness. Lack of money, dysfunctional life styles, including transience, homelessness, abuse, and family violence, also are associated with insufficient prenatal care, as are maternal depression, anxiety, fear, and denial. Despite these many factors associated with inadequate prenatal care, efforts to recruit pregnant women into care and keep them in maternity care are being tried to reduce the incidence of hypertension, pre-ecclampsia, ecclampsia, low birth weight babies, and infant mortality. Ecclampsia is a severe case of hypertension in which the women develops convulsive seizures and coma during the second half of a pregnancy. These patients are frequently admitted through the Emergency room in the Maternity hospital and are the staff's primary concern. How can we prevent this illness from occuring, and when it does, how can we treat this medical and nursing problem quickly and effectively? Even though our understanding of ecclampsia has increased markedly, the exact cause is still unknown. The best management is still good prenatal care which is lacking for the most part in this area.

In Brazil today exist two contradictory epidemiological profiles, one for the rich and middle class and the other for the poor. It is as if history had bifurcated, producing the expected demographic transition for the country, leaving the poor to die the way they always had: of sickness, hunger, gross neglect, and violence. The abandoned and criminalized street children seem

to be everywhere. The Brazilian Nursing Professors had Jeannie's safety and comfort foremost on their minds. They presented her with many opportunites to view and to study the socio-economic differences in their culture. Jeannie was most welcomed into the home of an upper class family and was treated with special affection. During the normal clinical hours, she worked in the public health project or the maternity hospital observing nursing students with the families from the Uriquiana project.

Jeannie wanted to learn about Brazilian health care and nursing practice, and especially, the nursing student's role in working with their clients. Through working with the nursing students in the community project and the maternity hospital, afforded Jeannie ample opportunities to observe how another health care system and other nursing practices manage to meet their challenges. The experience of living and working in another culture proved to be an unparalleled challenge, but was every bit worth the effort.

Jeannie achieved all of her objectives and then some. Evaluation was done by the student in collaboration with the Brazilian Nursing Professors, and discussed and confirmed upon returning to New Hampshire with the NHTC/ Claremont Nursing Professor counterpart. All of the participants in this exchange were involved in the planning and implementation of the students' objectives. Everyone had a vested interest in its success, making this a very unique exchange. Both sides, North and South, of this partnership benefited through increased working together, creating increased understanding of one another.

Jeannie would like to return next year with a short work permit or to volunteer her services where needed. She said, "I intend to return after my studies with added knowledge in the nursing field. The growth experience I received greatly enhanced my health perspective. This international experience enabled me to step out of myself and view an experience from a new and truly critical advantage point. Distance and separation from my familiar surroundings was a test for myself. Adjusting to climate, customs and foreign language was trying.

Learning to communicate with the people within their culture forced me to think in new ways. I will need to use ingenuity in order to tackle future unique health care problems. Lack of convenient access to supplies helped me to think about utilizing resources carefully. This experience helped me to foster self-reliance and bolstered my self-confidence. Most of all, it reflected on the quality of life these people experience every day and their tenacity to survive despite adverse conditions. I look forward to seeing similar opportu-

nities opened to future nursing students, from both the Brazilian University and ours. Continued cooperation and shared experiences will prove valuable to the future in the field of international nursing."

This experience was designed to increase the student's ability to make assessments of cultural influences upon an individual's health care status and to develop an ability to deliver culturally sensitive, safe and effective care. Jeannie gained knowledge, skills, and principles which will enable her to generalize to other cultural groups. Jeannie was able to share her experiences with other students, displayed her photos, and discussed her objectives with anyone willing to listen.

As nursing increasingly becomes a relevant, dynamic and significant force in today and tomorrow's world, cultural awareness becomes essential to serve people of diverse values, beliefs, and lifestyles.

For the practicing nurse, globalization of nursing means taking leadership roles. It also means guiding colleagues in the practice cultural care in hospitals and in various community agencies. Many nurses will need to develop creative strategies to handle difficult and complex multicultural care problems in clinical and community settings. Most important, nurses who are culturally sensitive can help their peers to understand why clients may reject, avoid, or refuse nursing care that is not congruent. Helping nursing staff and other health personnel grasp the meaning of cultural care and treatment modes from the client's perspective takes patience, knowledge and thoughtful strategies.

Globalization of nursing and in all aspects of nursing is an urgent goal and a worldwide necessity. It is imperative the nurses, as primary and continuous care providers, receive cultural nursing knowledge and skills to function effectively with diverse groups of people. It is, indeed, time to prepare leaders who should be in a position to respond to the current worldwide multicultural crisis in health care services.

RESPECT

Norma L. Forbrich

"Good morning, Dr. Jones. Did you receive the material we sent you last week?"

(Written) "Dear Marcia: Have you considered Farfinal?"

"Good evening, Ms. Andrews. Did you find what you were seeking?"

"Hello, Bobbie. How are you today?"

Which of the above individuals addressed is the youngest? the weakest? the most respected? If you responded in the standard pattern, Bobbie is the youngest and possibly the weakest. Dr. Jones is probably the most respected and might be the oldest.

How did you come to your conclusion? Most likely, from the form of address used by the unseen speaker or writer. In the instances where first names are used, the individual is generally considered to be younger, less respected, or less powerful than the speaker/writer. When a more formal pattern is used, the individual addressed is generally perceived at least as the equal of the speaker/author in power, age, or respect.

In the business world, many of today's graduates are at a disadvantage when compared to their counterparts of a generation ago. Previous generations routinely used formal address in all business situations, regardless of personal acquaintance, and in most superficial personal relationships. Today's graduates routinely address most others by a first name or an informal version of that name, without regard to whether or not the speaker/writer is acquainted with that individual.

A generation ago, the sales clerk, the manager of an office, and the head of a department would routinely address superiors, peers, and subordinates alike in the formal terms of Mr. Smith, Miss Brown, Mrs. Anderson, or Dr. Hancock. Failure to use this form of address indicated exceptional familiarity, limited respect, or a perception of weakness on the part of the other person. In most situations, the use of a first name was simply unacceptable without the explicit permission or request of the individual addressed.

When was the last time you were addressed by other than your first name? How well did you know the last five people who called you by your first name? How do you feel when a complete stranger begins talking to you and addresses you by your first name? by a nickname?

While teaching Business Communications and Office Practice courses, I made it a practice to refer to any individual and addressed all students in a

formal manner. Further, I required each individual to address all others, classmates and faculty alike, using courtesy titles and surnames. Nick, Alice, and Frank were banned. Ms Philips, Mrs. Walgren, and Mr. Hudson were required.

Based on that experience, the following three points struck home:

- a significant number of students are uncomfortable being addressed formally
- a significant number of students have no idea what another student's last name is—even when considering that other person a "friend"
- once exposed to the practice and made aware of some of its implications, students continue to use more formal terms of address in business settings

That students are uncomfortable when addressed formally may simply reflect lack of exposure to the practice. It may point up a variety of personal self-esteem issues. It may also reflect the experience of some students: formal address is used not simply as an impersonal form of address, but as the form used with dehumanization, invisibility, or non-person status.

That a student might not be knowledgeable of another's surname, even when professing "friendship" points up the instant relationship nature of using a first name. The very use of it implies a relationship which may not exist. Additionally, one might argue that such rapid "closeness" is isolating. What can you do if you've lost the phone number for that "friend?" Most directories are organized by surnames, not first names, descriptions, or characteristics. Once such a gulf is perceived, might breeching it become more difficult rather than less? How did you feel the last time a "friend" forgot **your** name?

Once the power of naming others is discussed, many students consider, enjoy, and exercise the control granted by formality in business. Personal feelings and personalities tend to be neutralized by formality. A slight, an insult, or an outburst tends to be diffused when encountering formality. When using more formal address, fewer extraneous comments tend to occur.

It might be argued that use of an informal address promotes a sense of personal caring for and about the student. I suggest that the student may respond as trained by prior encounters with parents, relatives, primary and secondary teachers, and any adverse encounters with authority. By using informal address, you may inadvertently be reinforcing inappropriate behaviors taught by those events.

It might be argued that informality promotes friendship. I agree that friendship seems apparent, but would argue that this is a false friendship. Most students do not expect a teacher to become a friend during a course. More often, the student is wary of the friendly authority figure. False friendship promotes distrust, not friendship. Realistically, can you manage true friendship with each student in every course you've ever taught? Acquaintanceship, yes; friendship, no.

If you teach a customer service related subject or skill, consider adopting formal address in classroom and/or laboratory situations. Your example will promote student use of it. Affective objectives as well as comprehension and problem solving objectives are part of performance based learning.

There is greater freedom to correct students when personalities and relationships are neutral. I might avoid critique of a substandard performance for Jerry, but exhibit no hesitation in commenting on discrepancies between performance and standards for Mr. Greenwald. Our customers, the students, deserve the best we know, the best we have to offer, not just what's comfortable among "friends."

When using formal address, a measure of respect is expressed for each student. Students are encouraged to express respect to and for you. For those students with self-esteem issues, this single device may quietly foster an improved self-image. "If this teacher sees me as competent, as an adult, maybe I really am!" ▼

Section II

TEACHING

TRANSITIONS

Susan M. Perry

I always wanted to be a teacher. In high school I was a Future Teacher of America and spent time "student" teaching the local fifth graders; I thought I'd died and gone to heaven. This was easy stuff; I knew I'd love it and be the best damn teacher Ledyard, Connecticut could ever see. Unfortunately my mother thought teaching was a jobless field back in 1973; with all those teachers returning from Vietnam, how did I expect to get a job upon graduating in 1977? At that time, I never argued with my mom, and seeing she was paying the bills anyway, I found myself attending a Community College in Connecticut for the up and coming field of Respiratory Therapy. For this career decision I have to give thanks to my two older sisters who were nurses. After seven years, several side jobs, some travelling, a little partying and a lot of determination, I finally graduated with my Associates of Science Degree in Respiratory Therapy in 1980, from Triton Community College, River Grove, Illinois.

After that I relocated back to Connecticut, got married, had a child and found myself buying a house and moving to New Hampshire. I found a job in a quaint hospital in Plymouth, New Hampshire, and I loved it. I'd still be there today if not for my boss who, during a yearly job appraisal, kicked me in the backside and told me I could manage an RT department, no problem. Fool that I was I listened to him and found myself the manager of an RT department in a quaint hospital in New London, N.H. This lasted several years until the stress overcame me, and I quit before I had a total nervous breakdown. However, before I did, I was a clinical support staff for the Respiratory Therapy Program at NHTC, Claremont for several years. Lucky for me too because it made me eligible for a position at this illustrious institute several years later.

This brings me to my current position as Instructor of Respiratory Therapy, a position for which I was totally unprepared. I guess my competence as a clinician made me think I would be equally as competent as a teacher. HA! The first year went by in a blur. I struggled to teach subjects I had only a rough grasp of myself such as the Bernoulli effect, Poiseuille's Law for flow, and Surface Tension, easy enough to grasp when talking about bubbles, but then apply the damn thing to the alveoli in the lung and make that understandable. I spent hours upon hours preparing a one hour lecture and then several more hours looking up stuff I couldn't answer in the classroom. It was the hardest, most depressing, self abasing year I've ever had. I've never worked so hard at being a failure before in my life. Attitudes and behaviors I had taken for

granted in the health care industry were problems to be dealt with, such as that big R word, Responsibility. I was supposed to teach and learn the stuff for these students. They didn't want any responsibility for learning themselves. This attitude from the students came as a complete shock to me. I'm from a profession where everyone is responsible; if not the clients tend to get sicker and die on you. It took one and a half semesters for it to sink into my thick skull that I wasn't the entire problem.

They also expected me to spend time covering stuff they missed by not attending class. At first I thought, well, this is college; if they don't want to come to class, that's their business. But of course I found out that then the students expected me to go over everything again the next class; being the dunce I am, it took me awhile to catch on to this act also.

And writing tests!!!!!!! I was continually amazed at how many ways a simple question could be interpreted. Here again I found myself taking the blame for poor grades; it must have been the way I worded the question.

During the summer after that first year my co-worker, Wendy, and I took a **Cooperation in the Classroom** course taught from the Johnsons' Brown Book. It was exciting; it was thought provoking; I thought these Johnsons had come along just to tell me it's OK to let the students do the learning. I don't have to learn everything for them. Here are techniques I could use to put the responsibility for learning where it belongs - on the students. I spent the rest of the summer making lesson plans on how I was going to address one of the biggest problems I ran into: namely behavior. How do you train an auto mechanic to become a health care worker? Teach them not only some delicate skill like sticking a needle into an artery, but those important interpersonal ones needed, especially when someone is dying?

Cooperation in the classroom was my answer. Wendy and I instituted cooperative learning techniques program-wide. First we set up base groups for all our students. Each student was assigned to a permanent group for the semester where they were responsible for keeping track of their own attendance points, homework points and mini quiz points. These base groups were the same from class to class, and for each class the base group had a folder with each of their names and a spot for each day of each class. We had 3 to 4 students to a group and each group had their own color. (Three students per group works the best) Our students were responsible for keeping track of their own points in their folders every day (1 point for attendance, 1 point for being on time). If all group members got those 2 points for the day, they each earned

a bonus point too (1 point for homework done, 1 point for it being done when they walked in the door). If all group members got those points for the day, they earned a second bonus point for the day (1 point for each mini quiz question, 2 questions everyday on the assigned reading). If all group members got those points for the day, they earned a third bonus point. These bonus points are accumulated until the end of the semester, and for every ten bonus points they can get a point added to their grade up to 3 points. 30% of their final grade came from these points, 70% of their grade was the test average.

What a give me you say? Well, guess what? Attendance and promptness has improved considerably. Students are at least 99% more prepared for class this year compared to last year. We move through material faster, and there is generally a higher level of understanding. It was not without a struggle. The senior class found this new system confusing. They could not seem to keep track of their points each class period. So some of them lost points due to poor record keeping during the fall semester, that was not a problem the following Spring semester.

At first they complained that it wasn't their job to be their group mate's keeper. They were being penalized if their group mate was late a lot. No, I reminded them they were being rewarded if their group mates were there on time. They are more prepared for class so they can all get the mini quiz questions correct and thereby earn another bonus point. They spend more time explaining material to each other; they cooperate better to learn because the entire group benefits.

The idea is to get the groups to help each other learn the material. Frequently class consists of the students working together in their groups to complete a task that has direct relation to the material. This technique works best for me during laboratory time when students need to practice skills. They help each learn the skill and check each other off before they get checked by me. These same skills are again checked off at the clinical site where they actually practice them on clients.

Wendy has more teaching experience than I and can develop an idea for a cooperative lesson on virtually any subject. Because we both use the same system and have the students work in groups, they have been inundated with cooperation this year. The seniors say they can't learn unless the material is lectured at them; I swear they do bad on tests just to prove their point. The

freshman class, who has been started on this type of learning right from the start, has accepted it more readily, and their class attendance is nearly perfect every day.

As the Fall Semester got rolling, I attempted to teach almost everything in cooperative group task work until the freshman students spent four and one half hours teaching themselves about different compressors by taking them apart and then teaching their classmates about their group's compressor. It worked great, it was fun, everyone learned the material; it took 2 1/2 class periods when I could have lectured the same material in 15 minutes. I began to rethink my cooperative task work lesson plans. I lecture to present the really hard concepts and skills. I let the students learn the easier straightforward material themselves. One idea I found works well in this situation is splitting the material up between each group and having them come to class with test questions they have written on their group's assigned material. Then we go over the questions in class as a way to cover the material. The students decide what the correct answers are. I type the questions, changing around the answers so they don't look exactly the same, and hand out the test. You'd expect everyone to get 100%? Not so, grades are on the average 5 points or so better but the A students still get the A's and the C students still get the C's. But they discuss the material and argue about the correct answers, instead of me standing in front talking for an hour or two. It's fun for all of us, they are better prepared, and they are learning to learn as a team. They have study groups outside of class. They help each other, and they care about each other, two of the best behaviors health care workers can exhibit AND they are on time. I have a long way to go to feel like I have reached a competent teaching level. But in this first year of attempting to use Cooperation in the Classroom, our freshman class is exhibiting 3 behaviors I want graduates of our Respiratory Therapy Program to have, so I know I'm on the right teaching track. ▼

Cooperation in the Classroom
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USING CONTROL THEORY TO CHANGE THE BEHAVIORS ASSOCIATED WITH PERFORMANCE ANXIETY

Jo Ann Clifford

There are a myriad of reasons why students experience performance anxiety. Some of the most common reasons, cited by students and faculty alike, are poor academic performance history, low self esteem, fear of failure, and unskilled use of study techniques. Accompanied by life long experiences of ineffective behavior choices, the anxious student's stage is set for acts of performance anxiety.

William Glasser's Control Theory (1) contends that all behavior is internally motivated. Actions or behaviors are an individual's best attempt, at the time, to meet basic universal physiological and psychological needs. Basic physiological needs of thirst, hunger, safety and sex are widely recognized and accepted. Less understood as driving forces behind behavior are the basic psychological needs of love and belonging, the power to effect one's environment, the freedom to make choices, and the need for pleasure and fun.

Control Theory states that **all behavior** is purposeful, need fulfilling and chosen. Even the most basic and seemingly ineffective behaviors are created and organized within a person's psyche because they are need fulfilling. Chosen patterns of behavior become so ingrained and automatic that they are employed with little forethought on the part of the individual.

Adult learners have highly organized patterns of behavior. Frequently these patterns of behavior reach a peak when the individual is confronted with an anxious situation. In the testing situation, these patterns of behaviors may or may not be effective in getting the desired results. In Control Theory terms, behavior is referred to as "total behavior", meaning that all behavior has 4 interdependent parts. The four parts include physiology, feeling, thinking and doing behaviors.

Control Theory believes that an individual has the ability to choose how one wishes to behave. In order to make a more effective choice, the first step is to recognize a behavior as ineffective and to desire to make a change. The next step would be to explore the total behavior by examining the physiology, the feeling, the thinking and the doing parts. Finally, the student organizes a new total behavior and then practices that behavior until it becomes familiar, automatic and ultimately valued as a need satisfying behavior.

I began integrating Control Theory and Reality Therapy (CT/RT) practices into my everyday experiences with students about 3 years ago. The practical, student driven concepts of CT/RT are what make it so appealing to me as an educator. As I become more understanding of basic human needs, I discover more useful classroom applications for CT/RT. The following is a practical classroom approach for dealing with performance anxiety or that which students often refer to as "test anxiety".

I developed this approach to use in the classroom situation to assist students in choosing responsible and effective control of their actions and thoughts during a testing situation. Keep in mind that this model could be adapted to meet a variety of needs in a variety of settings. My first goal is to attempt to assist the students to get in touch with their current total behavior when facing a testing situation.

Step 1. Examining the existing behavior.

Begin by simulating a testing situation. Students are given an unannounced quiz. After they attempt the quiz for 5 minutes, I ask them to stop to and respond in writing to the following questions. I provide a handout for this part of the exercise. Allow adequate time for this written information, for it is crucial that the student is able to identify and process current behavior.

1. What was your **body telling you** as I announced that you were going to have a quiz?

   Some of the more common physiological responses reported by students are: pounding heart, souring stomach, shaking hands, holding breath, headaching.

2. What were you **feeling** as you began the quiz?

   Some of the feelings reported have been anxiety, nervousness, anger, resentment and mistrust.

3. What were you **saying to yourself** when you were confronted with the thought of having to take a quiz and as you began to take the quiz?

   Self-talk is a very important indicator of the thinking part of total behavior. Common responses from students are: "I can't do this! I can't believe that she would do this to us. I need a cigarette. I haven't had enough time. Why did I show up today? Here I go again... another "F"."

4. What did you find yourself doing when you heard that you would have to complete a quiz and what were you doing as you began to take it?

   Common doing behaviors cited by students are; throwing the pencil down, staring into space, slumping down in the chair, jumping quickly to the answers of the questions to see if any of them made sense, rubbing eyes and hands through hair, focusing on the test, doing nothing at all.

When the written portion of this exercise is done, students are invited to share what they have written. This exercise generally provokes a great deal of discussion. Allow time for the students to share feelings, thoughts and actions, validating the realness of the anxiety. Provide time for this valuable experience and keep the discussion focused on total behavior.

Step 2. Explore the wants.

Assist the students to create a clear picture of what they want the outcome of the testing situation to be. Do they care if they experience high amounts of anxiety? Do they want to experience some anxiety during a testing situation but not let it interfere with information processing? Do they want to approach the situation in a self assured way? As the instructor you must be careful not to make assumptions about what you think the student should want. Remember, some individuals live with what is referred to as "crisis life", and the behaviors associated with it are need fulfilling for that individual at that time on some level. Spending time exploring with students what they really want will help them direct their actions and encourage ownership of the behavior.

Step 3. Self evaluation

When each student appears to have a clear picture of what he/she wants the testing experience to be like, the evaluation question is asked.

Is what you are **doing now** getting you closer to what you want?

This step opens the dialogue of self evaluation. The student will ultimately have to answer the question yes or no. Look for the student's commitment to the self evaluation.

If it appears to be missing, the student is not ready to let go of the anxious behavior. This means that the anxious behavior is fulfilling a basic need for the student at this time in some way. There are many examples of this in the

classroom: a student may act out as the class clown, which is an attempt to meet needs of belonging, power or fun, even though the behavior may be quite ineffective in a learning situation. If the student cannot get the basic need for love and belonging, power or fun met in an effective way, the behavior will continue as need fulfilling.

Step 4. Creating a new total behavior plan.

As you begin to help the student create a new behavior plan, choose the thinking or doing area of the total behavior. These are the easiest behaviors to begin to work on. The instructor asks the same set of questions, but phrases them a bit differently. The student again writes his/her thoughts next to the first set of responses.

1. If you were the confident student that you want to be, what would you be **thinking** as you begin a test?
2. If you were the confident student that you want to be and were **thinking** those things that you just wrote down, what would you be **doing** as you approach the testing situation?
3. If you were the confident student that you want to be and you were thinking and doing the things you just wrote down, how would you be **feeling** about confronting the testing situation?
4. If you were the confident student that you want to be and you were feeling, thinking, and doing those things, what would your body be telling you (physiology) as you confronted the testing situation?

Students may need some help creating new behaviors because the old ones are so familiar. Brainstorming with the students provides a wide array of possible new behaviors. The instructor must be very careful to not undermine the power of this exercise by taking on the responsibility of choosing and creating behaviors for students.

As the individual student creates and organizes a new behavior that he or she thinks will work, be sure as the instructor that the plan has a 97% chance of succeeding. The process of creating new and effective behaviors should be one small successful step at a time. Continue to ask questions like: Can you carry out the plan? When can you carry out the plan? Get the student to com-

mit to the plan of action. The instructor's job is to follow up to see if the student was successful. If you find that the student was unable to follow through, don't criticize the student's inability to follow the plan and don't accept excuses. Just begin again with a smaller step in the plan toward success.

Control Theory can effect performance anxiety by focusing on the current behaviors of the student. It allows the student and instructor to enter into a student driven partnership aimed toward responsible, effective behavior. The student is the key participant in the process and decides what behaviors are ineffective. The student creates the plan of action and assumes the responsibility to carry it out. The instructor's role is to find out what the student really wants, bringing the student to the point of self evaluation, and then guiding them through the process of creating new desired behaviors. The instructor must believe in the student's ability to make effective behavior change and more importantly not give up on the student if success is not immediate.

Ineffective psychological behaviors are developed over a lifetime. Two roads lead to success. The student can choose to learn **new behaviors to change what they do** to get the results they want, or they can **change the picture of what** they want. The student must write the script, direct and play the leading character.

The stage is set, the camera is on, and the call is **action!** ▼

REFERENCE LIST

1. Glasser, William, M.D., **Control Theory**, New York: Harper & Row, 1984.

   Control Theory in the Classroom, New York: Harper & Row, 1986.

   The Quality School, New York: Harper & Row, 1990.

   The Quality School Teacher, New York: Harper & Row, 1993.

2. Wubbolding, Robert E., **Understanding Reality Therapy**, New York: Harper & Row, 1991.

DO I NEED THIS?
Implications of Competency-Based Education for Learner and Educator Roles

Neal Steiger

Last year, while visiting a nearby college, my attention was drawn to a bulletin announcement of an upcoming event. The ticket information struck me as particularly odd: "Adults $5.00 / Students $3.00." Maybe I tend to think too much about things others pass by, but the idea that adults and students were two different groups of people seemed bizarre to me, and it made me remember my own college education.

After high school I went to a state college. Like most colleges then, it had the policy, **In loco parentis**, roughly translated, "When the student-child leaves home, the college takes on the role of parent." This policy played out in various policies including those governing dormitories, required military training, and as far as I could tell, required courses including English, math, history, science, physical education, and speech.

Most of the requirements probably made sense. Like many things that have become so much a part of habitual practice, no one ever explained them to me. As a typically passive learner, of course, I had never bothered to ask. I may have assumed that, after all, here were the education professionals, and whatever they had chosen was probably designed to meet my own individual needs. Never mind that I was one of over 20,000 students. After all, I had already spent twelve years of education being treated like a kid and no one had even suggested to me that there was much choice.

My own dependency as a student was reinforced by my "privileged" status: my parents willing and able to pay my tuition and room and board. In those days, **they** were the consumers; it was in some ways more their college than mine. I saw the requirements as part of a formal system of benign condescension that I had not created and which did not seem designed to meet my needs. And I partied more than I studied.

As for the messages that educational systems send it users, I hope that some things have changed since then. I feel fortunate to be working at a college and within a system where people count. We ask students what's working (and not) and invite participation in helping make real changes. Still, when a student asks, "Why do I have to take this course?" or states, "I don't need this for my career!" I'm not sure that I'm always able to respond effectively.

I hear myself repeating some of the standard answers: "Employers want people who are competent thinkers and communicators . . .." And, yes, research shows that American high school graduates are way behind other industrialized nations in some workplace competencies. The suggestion has been that the U.S. is well on its way towards having a work force not qualified to compete with its global neighbors. The reasons for change are compelling, even frightening.

Still, many aspects of today's learning institutions remain highly authoritarian; its academic and service policies and procedures often treat adult learners like kids. Sure—some of them still act like kids, avoiding initiative and responsibility. But most of the students I've met want to learn, and learner involvement and choice do not necessitate lowering academic standards. When the whole college community—students, faculty, staff, administration, and the larger community—is engaged in reinventing the educational system, it can meet a wider range of needs.

I feel hopeful about the role competency-based education (CBE) may play in all this. The concept that learning is what you can *show* you know by what you do often contrasts with a system that in the past might have graduated students who did not meet clear standards, or that made students take courses that repeated what they already knew.

Core competencies may be a promising start. Many of our educators have begun redesigning course materials to connect each learning activity t today's and tomorrow's needs based on national and local research. These needs put emphasis on workplace competencies which include the ability to think and act independently, to collaborate, and to adapt to future change. Each of these skills implies learner choice.

Andrea Sgroi described her perception of adult learners: they "know themselves and their learning styles, and they are decisive about what they choose to learn. They decide what it is they are interested in, and go decisively about selecting the place, the time, and the teacher; deciding what they will or will not learn . . .." (67). I like to think that that's the direction we're going: more understanding of the needs and contexts of learning, more options. Learners who have and make real choices have a stake in what they learn.

Then the question, "Do I need this course?" will become a very practical one. Perhaps it can be rephrased: "What are my personal and career goals?" Or maybe, "Where do I see myself five (ten, twenty, . . .) years from now?" And "What skills do I need to get there?" Or, as a consumer. "What kind of education or training do I need or want?"

Plato claimed that one of the highest forms of knowledge was the realization of how little we really do know. So maybe for now my best answer to "Do I need this course?" is, "I don't know; let's discover a way to find out." In this context, the roles of learner and educator are collaborative. We're not supposed to have all the answers.

Problem-solving: not getting stuck in the question but finding and testing potential solutions—I guess that's how adults learn. Competency-based education may be a useful concept towards allowing more of this to happen.

REFERENCES

Sgroi, Angela. "Let's Face the Music and Dance: A View of Learning in the Arts." In *Learning for Personal Development*, Lorraine A. Cavaliere, Angela Sgroi, eds. (New Directions for Adult and Continuing Education, no. 53). San Francisco: Jossey-Bass, 1992.

INSTRUCTOR DEVELOPMENT
The Shift to the Adult Education Paradigm

Adapted by Norma L. Forbrich

Adapted from **Instructor Development: The New Service and Support Course and the Shift to the Adult Education Paradigm** by Richard M. Rose, Ed.D., ECNE, CNI, Instructional Design Specialist for course 801 [Novell NetWare] (CompuServe ID# 71421,34); published in *Novell Education Bulletin*, October 1993, pp 33-38.

Introduction

This comes to you with an invitation to begin thinking about teaching adults in a new way. The goal of this new way of thinking is a happier and more productive experience in the classroom for both you and your student.

We naturally tend to teach the way we were taught as children. We assumed our teachers knew everything. The teachers took total responsibility for our learning. The teachers made all the decisions about what was important, how much of it we were required to know, how we would be tested, and what system of rewards and punishments would be imposed on us to encourage us to meet their standards. The system was built around our fear of failure. Most of the rewards were "extrinsic"—if we did the unpleasant math page, we might get a smile, an "A" or a cookie.

As experienced instructors of adults, we know that the traditional model for teaching children doesn't work with adults. (Actually, it's pretty limited for children as well, but that is off our topic.) The core problem is that if we focus an experience around an extrinsic reward, busy adults will generally become invested with the reward, rather than with the experience itself. Instructors can fall victim to the same mind-set and drop into a pattern of mindlessly "covering" the material, rather than establishing the connection between the text and the direction of genuine student interests. When this happens, hopes of test-passing supersede learning, and the classroom environment can become bored, sullen, resigned, or even hostile. The only relevant question becomes "Will it be on the test?"

There is an alternative to teaching adults as if they were children, which I will refer to as the Adult Education Paradigm (AEP). As a skillful instructor of adults, you are probably already incorporating some of the ideas of the AEP

into your teaching. Using your personal creativity, you can build on the AEP, regardless of what materials you are working with. In its simplest form, the AEP is an attitude of service toward the customer (student) and of mutual respect between student and instructor. We can also consider the AEP as a Bill of Rights for both students and instructors.

The Student's Rights

The Right to Be Treated As a Unique Customer with a Valuable Base of Experience

Each student will have a different agenda when entering your class. This agenda will derive from their personality, their job description, and the circumstances under which the student comes to the course. The instructor should strive to learn about individual needs early in the class and use supplementary resources such as the Learning Resource Center (LRC) or other materials to meet as many of these needs as possible.

Virtually every student who comes to a class will have something of value to contribute to the collective knowledge pool, even if it is only a story of a bad experience. These contributions are critically important to the richness and positive atmosphere of the class. These contributions should be carefully encouraged by the instructor. Two-way mutually-respectful communication with all students is the ticket to a pleasant class.

The Right to a Fair Opportunity at Success

Each course presented aims to do more than simply provide a set of tools for carrying out activities or for troubleshooting. Each course also works to foster a spirit of confidence on the part of the student in completing projects or in troubleshooting situations. Those who think they can, can. Those who think they can't, give up. The greatest builder of confidence is success at a challenging task.

It is the nature of any testing procedure to discriminate between those who succeed and those who fail. Each course is not an evaluative tool, but a learning experience. We want success at some level for each student in the course. Specifically, we want everyone to have a positive experience with each learning exercise.

For this reason, future learning exercises may contain far more detail than past exercises. The detail would provide sufficient clarity, help, and warnings of pitfalls to ensure success for the highest possible percentage of those who try them. This may make exercises somewhat voluminous on paper, but they should take less time to do than if the instructions were sketchy.

Another example of giving your students a fair opportunity for success is preparing a solid set of lab notes that warn about known pitfalls concerning specific equipment used in your teaching. Such notes will also make your life much easier during learning experience.

The Right to an Instructor Who I Motivated and Prepared

Courses require preparation on th part of the instructor, both when you first start to teach it and as you continue to re-teach it. A great deal of supplementary material from a wide variety of sources is available to you. You need to spend time becoming familiar with this ever changing body of material. Check for references to additional books, articles, tapes, and other resources presented in various bibliographies. Surf the 'net (InterNet) to become aware of current resources. Stay close to your professional periodicals and bulletin board services (BBSs) to keep your teaching up-to-the-minute.

The Right to Skillful and Appropriate Teaching Techniques

The skillful teacher of adults strives to create "intrinsic" rewards in the class. The class itself can be interesting, fun, challenging, exciting, and entertaining. That is the essence of the AEP. Students will want to go to class because they enjoy what is going on there every day, not just because there is the hope of a "cookie" at the end.

Instructor guides and other resources offer many suggestions on how to present key concepts in the course. Skillful teachers are thoroughly familiar with a variety of options, and are ready to switch to an alternative strategy if the class is not responding to a given style of teaching.

When you use audio/visual aids, use them for a purpose. Nothing is more distracting than an instructor who is "falling behind" and flying though a set of overheads at breakneck pace simply because the in-

structor thinks there is an obligation to show each one. The time to show an overhead is when you intend to work with it by comparing and contrasting its parts, annotating it in real time to prove a point, etc.

Visuals should be created to be an integral part of the instructional flow. Use them—don't let them use you!

The Right to a Lab That Reflects Real World Conditions

The use of equipment must reflect what students are likely to see on the job. The proper equipment is required to teach a course well. Each instructor/course will have to tailor a course with a set of personalized lab notes that reflect the specific equipment used.

The Right to Be Informed of Prerequisites

Prerequisite knowledge is important for any course. Students should be informed of the recommended prerequisite course(s), experience(s), and/or skill(s) before registration. Each student should be strongly counseled to accomplish the prerequisites unless there is an unusual level of knowledge.

The Right to Take Responsibility for Your Own Learning and Prepare Adequately

There is far too much material in any course for the instructor to "cover" every word as one would do when teaching children. Each student must take personal responsibility for becoming familiar with the material. The proper role for the instructor is to demonstrate, facilitate, enhance, supplement, clarify, and, most importantly, tie the material on the page to the interests of the students. It is not to talk about every paragraph of text.

It might be recommended that all students obtain texts and course outlines one to two weeks before the beginning of class, with the understanding that the student is encouraged to start working with the material in the first segments. It would be useful to make this point at the time of registration.

At the end of each class day, the instructor should announce what is planned for the next day. The students should be expected to read

through the next day's material before class and have questions prepared for the instructor. If a student is aware of weakness in prerequisite knowledge need on that day, the student should take positive steps to remedy the situation.

There is clearly a baseline of material that both students and instructors will expect to have been thoroughly taught and understood by the end of the course. This baseline is reflected in the objectives. Beyond the baseline, the instructor should empower the students to make choices about how the class time should flow. Many optional demonstrations and topics for discussion are generally available for a course. The students should have a major say in which enhancements are used in class.

The Right to Practice Newly Learned Skills

Educational research clearly shows that new skills that are not used are quickly lost. There may be need for more laboratory time than is scheduled for a course. To get the full benefit from the course, students should plan to use what has been learned in the "real world." Students will find the need to make accommodations for differences between the classroom/lab and the conditions outside the classroom/lab. This leads to important learning.

The Right to an Evaluation Instrument that Really Measures The Ability to Do the Job

Performance-based learning focuses on the student's skill in handling situations, rather than on memorizing information. Evaluation should test the ability to find solutions based on cues/clues available in the major research tools of the course.

The Instructor's Rights

The Right to Prepare the Instructor and the Environment to Teach the Course to a High Standard

A substantial amount of preparation may be required to bring an instructor and/or an environment up to speed for a course. Study time for the instructor may be significant. Instructional managers (Academic Deans, Department Chairs) should be prepared to schedule adequate preparation time for instructors to become comfortable with the course.

The Right to Students Who Are Motivated and Prepared

Each course requires that students come in with prerequisite knowledge and the readiness to build upon that knowledge. If a student has been informed of the prerequisites and of the importance of these prerequisites, but still elects to enter the course unprepared, the instructor is not responsible to slow down the rest of the class by teaching the prerequisite knowledge.

The Right to Expect Adult Responsibility from Students

Every course is full to the brim with materials that will help the student on the job. There will be lots of time to explore, but no time to waste. The instructor should set the expectation (and the example) from the first day that class starts on time and on target. Students should expect that all class time is valuable.

Students must also take responsibility for carefully heeding the many emphasized warnings in the text(s), outline(s), procedure(s), etc., placed there to protect the equipment.

Students are expected to be responsible for individual materials. It is the student's responsibility, not the instructor's, to provide duplicate materials if the student shows up without them.

The Right to Support in Empowering the Customers (Students) to Help Set the Direction of the Class

Instructors and instructional managers (Academic Deans, Department Chairs) who were brought up on the teacher-centered model of totally controlling the interaction in the class regardless of student needs may at first be uncomfortable in sharing power with the customer/student. The instructional staff may need support and encouragement in beginning to open up teaching style to a truly student-centered AEP classroom. Reflective practice groups, were teachers observe each other and then reflect in a constructive way on how things went, can be invaluable.

Summary

Most of us became teachers because we were looking for something. It was often the experience of feeling competent, useful, and appreciated. A class full of satisfied students can go a long way to providing that self-validation.

If you are regularly getting that experience of professional satisfaction, you are probably already using elements from the AEP in your work. If your personal rewards in teaching adults have been less than you might have hoped for, this may be the time to try this different approach.

The Student's Rights

The Right to Be Treated As a Unique Customer with a Valuable Base of Experience

The Right to a Fair Opportunity at Success

The Right to an Instructor Who Is Motivated and Prepared

The Right to Skillful and Appropriate Teaching Techniques

The Right to a Lab That Reflects Real World Conditions

The Right to Be Informed of Prerequisites

The Right to Take Responsibility for Your Own Learning and Prepare Adequately

The Right to Practice Newly Learned Skills

The Right to an Evaluation Instrument that Really Measures The Ability to Do the Job

The Instructor's Rights

The Right to Prepare the Instructor and the Environment to Teach the Course to a High Standard

The Right to Students Who Are Motivated and Prepared

The Right to Expect Adult Responsibility from Students

The Right to Support in Empowering the Customers (Students) to Help Set the Direction of the Class

POSTER PRESENTATIONS FOR SENIOR NURSING STUDENTS

John D. Colbath

For the last few years, during the last semester, a poster presentation project has been used for the senior nursing students with favorable results. The last senior nursing course focuses on the theoretical concepts relative to the delivery of comprehensive care to individuals experiencing multiple health problems, and mental health dysfunction.

Current health care trends and issues are also presented.

The course is divided into units of study with the poster presentation overlapping two units of study. One of the units encompasses the assessment and management of groups and the other unit looks at the assessment and management of patients with potential for infection related to depressed immunological response. The senior nursing faculty have worked to develop a variety of methods for evaluating students in this course and the poster presentation has become a highly successful method.

The students themselves become both active participants in the group process as well as becoming actively involved in a peer review process. All posters are displayed outside the nursing simulation laboratory at the school at the completion of the project.

All of our nursing students are adult learners but we do not unfortunately always address the adult learning principles for this group of students. Our nursing programs utilize very traditional teaching and testing modes including lecture, case studies, discussions, and written examinations attesting to the student's ability to acquire course content. Too often there are not enough opportunities to evaluate the student's ability to integrate and apply information in a practice setting. Malcolm Knowles (1980) theory of andragogy makes several recommendations for planning and evaluating adult learning that are pertinent to the development of a poster presentation. Based on his principles the poster presentation project becomes both a student learning and an evaluative process. The poster presentation promotes independent student thought and action while working together in an adult work group. The poster presentation encourages students to relate theoretical knowledge from the immunological unit combine with specific group process interactions and to demonstrate, through production of a poster, both the student's level of comprehension as well as the ability to work successfully within a group.

Within the unit of study related to the patient with depressed immunological response, the students thoroughly study the patient with AIDS. While studying groups, the students get an overview of the characteristics, roles, membership and management styles and decision making processes of any group. From this combined acquired material the students are asked to produce a poster presentation for a specific grade.

The students are randomly assigned to groups of three or four with some care taken to break up existing know groups that have already formed within the class such as study, travel or clinical groups. Each group is in turn randomly assigned to prepare an appropriate AIDS awareness or educational poster for an assigned specific age group. The specific age groups are elementary age students, junior high age students, high school age students, college age students and, lastly, the community at large. The nursing students are given free choice as to the actual design and creation of their poster but the content must be congruent with material either presented on AIDS in class or found in the assigned literature. Traditionally, this learning material would be evaluated via an examination or paper assignment.

Students are given the grading criteria for the poster:

- 30% of the points will be based on the poster's relevance to the age group,
- 30% of the points will be based on the poster's overall attractiveness,
- 20% of the points will be based on the poster's accuracy of information, and
- 20% of the points will be based on the creativity of the group in preparing the poster;
- the grade for the poster will be a group grade,
- the grade for the poster will be determined jointly by a group of faculty judging the poster on the above criteria.

To add to the aspect of the group process involved in creating the poster for presentation, the students must attach a three by five inch card to the back of the poster with the following information on it:

- the target audience for the poster,
- the group member names and

- an assigned percentage of how the group grade is to be divided within the group using the following criteria:
- each member of the group can get from 85% to 115% of the overall group grade,
- the percentages for the group must average 100%, meaning that if one group member was, to say, get only 85% of the group grade then the additional 15% of his grade would be available to be divided among the other members of the group.

By allowing the group to divide and assign percentages of their total group grade among group members they are able to practice concepts of the group process that they have just learned in the study unit on "group."

This has been a very successful as an alternative learning activity for the senior nursing students as well as being a very successful evaluative tool for the nursing faculty. The poster presentation is a stimulating alternative to the student writing another paper or to the faculty grading another standardized test. The faculty are able to gain new insights into the ability of the students to both work in groups and to synthesis material that is traditionally presented in the lecture and reading assignment modes. The poster presentation assignment fosters closer working relationships among the students and allows them to participate in both peer review and the working group process.

For the senior nursing faculty the use of the poster presentation as an alternative learning activity encourages the senior nursing students to integrate newly learned concepts and to demonstrate their understanding by sharing their unique work with peers and with the faculty.

REFERENCES

Knowles, Malcolm (1980). **The Modern Practice of Adult Education.** Chicago: Follett Publishing Co.

RAISING STANDARDS AND INCREASING CONFIDENCE:
A Cooperative Approach to Teaching Writing

Marion Schafer and Milt Camille

Our Problem

Four years ago when we began teaching the required English Composition course at NHTC—Berlin, we expected to find and address weak writing skills. We were surprised, though, to discover that many of our students were afraid of writing. As a result they accepted little responsibility for the quality of their work, and they were apathetic about becoming better writers—D was good enough. Worse, these students often attributed their success or failure to their teachers, rather than accepting responsibility themselves. These attitudes limited our effectiveness.

The challenge, then, was to structure an environment in which students could succeed by focusing attention on their writing, improving and accepting responsibility for its quality instead of wasting time and energy on worry and excuses.

Students needed to learn that their successes or failures as writers were not decided arbitrarily by instructors who either liked or disliked them or their work. They needed to see that they could learn to write—write well—according to principles that they were entirely capable of learning and applying. It became clear that we as instructors needed to define standards clearly and to emphasize them consistently. We needed to use writing-process methods and multiple-draft approaches to student writing so that we could become facilitator-coaches, withholding judgments about success and failure until the last possible moment. Students who approached English Composition willing to work with us would then have a chance not only to succeed but also to understand how and why they had.

Our Solution

We decided to present ourselves as a teaching team responsible for shepherding all English Composition students at NHTC — Berlin through the writing process. We decided upon a cooperative approach to reading and commenting on successive drafts, holding students accountable for daily

assignments but not grading the drafts. We decided instead to grade our students' work collaboratively at the end of the semester, reading their portfolios when the rest of the College takes final examinations.

In order to accomplish our goals, we needed to solve a number of problems, developing a cooperative approach that would accommodate our different teaching styles and personalities. First we articulated the evaluative criteria we would use to evaluate student portfolios. After considering various methods of evaluation, we developed a checklist of descriptors for A, B, C, D, and F essays. We attached the list to the course outline, which we distributed and discussed at the beginning of the semester. We used language that both students and teachers could use to talk about writing. Second, when our schedules allowed, we exchanged classes part way through the semester so that each of us had a chance to teach all our students. Third, we not only commented between the lines of our students' drafts, but we also used a standard feedback-sheet which enabled us to use the language of our evaluative descriptors consistently to summarize our responses to mechanics, style and organization in each draft. We pointed out strengths and weaknesses in each draft, and we offered specific suggestions for the next draft. This feedback-sheet accommodates summary comments for up to six drafts of each paper and accompanies the paper as it evolves. It becomes part of the record of successive drafts which students must supply in their portfolios at the end of the semester. Finally, we planned time at the end of the semester to read the portfolios. Because we use portfolio assessment instead of final examinations in English Composition, we collected our students' portfolios during the last regular meetings of classes and spent the College's examination period reading. To accommodate the subjective nature of writing-evaluation, we used our checklist of descriptors. Although we read in the same room at the same time, each of us considered each paper without knowing how the other had evaluated it. We expected that questions would arise about individual papers, and we addressed those questions as we read. For example, one descriptor of a D or F paper is that it "contains errors in sentence structure, grammar, usage, mechanics that interfere with reading, understanding." The degree to which such errors interfere with a reader's understanding varies with the reader, so when disagreements arose, we sought a third reader's opinion. We kept notes about specific problems so that we could later examine them more closely and, if necessary, revise our list of descriptors before another semester.

Now near the end of the third consecutive semester of collaborating to teach English Composition, we believe that this approach is right for our students as writers and for us as teachers. First, students are less likely to think that getting a good grade is a matter of divining an individual teacher's personal preferences. The idea that more than one teacher will read their work (within the classroom during the semester and at the end of the semester during portfolio evaluation) helps students focus their energy on writing rather than on teacher-pleasing. Second, if a student has been struggling with the writing he or she has been doing with one of us, then a different instructor represents a new opportunity. Even when our comments turn out to be the same, as they usually do, they nevertheless feel different to the student. Third, students begin to understand that many of the standards that underlie a writing teacher's advice are not unique to the teacher and that the general framework of those shared standards can accommodate degrees of emphasis and shades of judgment.

Another benefit for us has been a noticeable decrease in the number of students who complain about their grades at the end of the course. Our students know that at least one other instructor has evaluated their work and that the grade represents consensus. In addition, we ourselves feel more comfortable about grading, and while we go home tired at the end of a portfolio-grading session, we believe that we have been as fair and as objective as possible. Generally, students who have failed the course so far have done so because their portfolios were incomplete: either excessive absence during the semester has resulted in missing or incomplete drafts of their portfolio pieces, or the independently produced essay which we require in each portfolio has not been submitted.

Best of all, each semester we have received several portfolios whose contents were obviously superior throughout, and we have been able to show students the results of everyone's work by posting portfolio grades. (We use student-identification numbers.) Although we also return portfolios, including our descriptor-checklists for the papers they contain, students often linger around the posted grades, noting the range of our evaluations and determining how their individual performances compare with those of the entire group. Their comments suggest that they consider our evaluation-process fair and objective. Many pleased with their success.

Our Future

Though our personalities and methods differ, we are fortunate that we are a small department consisting of two full-time English teachers with compat-

ible philosophies. Still, the geography of the North Country and, until recently, a burgeoning student enrollment have brought adjunct faculty into our department, strengthening both our program and our process. We have recently proposed and received the approval of our deans to involve all English Composition adjuncts in our cooperative approach. Beginning with the fall semester of 1994, we expect

- the same standards of evaluation will be used in all English Composition classes, on and off campus.
- all English Composition courses will address the same broad, competency-based goals, though specific content and methods of instruction may differ.
- each student taking English Composition through NHTC—Berlin will submit a portfolio at the end of the course. Each of the papers in the portfolio will have been guided through multiple drafts, and the record of the instructor's feedback will accompany the drafts.
- each portfolio will be read and evaluated by at least two instructors, one of whom should be but won't necessarily be the student's instructor.
- adjunct faculty, including those off campus, will be offered the choice of participating in the final evaluation of their students' work or of sending portfolios to the campus for evaluation. If off-campus faculty choose to participate, one of us will travel off campus to serve as a second reader.

Having discovered recently that collaboration helps new adjunct faculty to orient their materials, methods, and evaluation for the students we work with at NHTC, we plan to meet with all adjunct faculty soon to introduce and explain our cooperative approach.

Our collaboration has required each of us to move over to accommodate the other. And it continues to require time of us—time to evaluate all our students' work at the end of the semester and time to analyze and revise our methods and materials. But we believe that the approach gives back more than it takes. We have already begun to see how we can easily adapt it to an outcome-based framework. In fact, our list of descriptors for acceptable (formerly

C), good (formerly B), and superior (formerly A) papers articulates what we mean by competence, and with the approval of our academic dean, we will begin in the Fall, 1994 semester to require students who submit unacceptable (formerly D or F) portfolios to repeat the course. When this happens, we will have eliminated D in English Composition as a passing grade, and with it the idea that "D is good enough." Most important, we believe that our approach produces better writers—writers both confident and competent.

For a thorough and well-written discussion of portfolios and multiple-reader assessment, see ***Portfolios: Process and Product***, eds. Pat Belanoff and Marcia Dickson, Portsmouth, NH: Boynton/Cook, 1991.

MASTERY TESTING

Denise S. St.Cyr

"Every man who rises above the common level has received two educations: the first from his teachers; the second, more personal and important, from himself." (Edward Gibbon: Memoirs)

Historically, the subject of testing and its inherent value has generated heated debates and has resulted in blistering analyses by the educational community. It continues to court controversy.

Any student who has ever received a score or grade that is patently unacceptable to him/her has plumbed the mysteries of this phenomenon. This individual justifiably feels that the phantom security or insecurity he/she receives from grade mania is an intellectual exercise in futility because tests are frequently perceived as semantics without substance. The result then is lackluster performance reflected in more poor test grades....a vicious circle. A flood of negative feelings ensues and results in low self-esteem and intense waves of frustration. The stinging darts of test block and test anxiety cripple the student as he/she tries valiantly to fulfill conventional expectations. This rings hollow and is counterproductive because the drive for success creates stress, academic surrender and failure. "Success has a thousand parents. Failure is an orphan." (Lee Iacocca)

Because tests are an integral dimension of education, they should be good instruction unto themselves and they should serve as supplements to effective teaching strategies. Through a complex of dyadic efforts between teachers and students, testing can become recognized as organized flexibility.

This might be accomplished through mastery testing, a new term for an old concept. The format is as follows: Students take an objective test and the instructor corrects it. The instructor then returns it to students with the appropriate grade. Students are then offered the opportunity to retake the exact same test with open book and open notes. This time however, they focus only on questions answered incorrectly. They must also, in brief form, provide justification for the new answer. Teacher again grades the examination and averages both scores. Thus, students learn to think more critically. Their initiative and commitment increase substantially. They become self-teachers; the test/examination is the vehicle.

This coupling process is a subtle way for students to maximize their potential and to demonstrate sustainable improvement. The second exposure to a

test allows them to distinguish what is essential from what is incidental. A tertiary benefit is that mastery testing yields curricular continuity.

For students, it is a catalyst for change. For educators, it is a tool for quality service delivery. For both, it is a guide for accountability, a working alliance, a collaborative approach....hallmarks of success.

PRACTICE LEARNING:
Teaching Students to Learn in the Workplace

Walter Ryan

Recent developments in technology have led many people to hope that through the computerization of instructional methods students will learn more readily and professors will teach more efficiently. Some educators see students as being unable or unwilling to learn using traditional pedagogical methods due to heavy exposure to television, videos, computer games, and other similar media. Other educators see perceived cultural or ethnic differences between themselves and their students as an argument in favor of increased use of computerized educational media.

There are many pedagogical methods. No longer is the time honored technique of a professor standing in front of a class and lecturing seen as the only, or even the most appropriate, method for use in the college classroom. One approach to choosing an appropriate method is to determine how the worker will be expected to update his or her skills in the workplace. Then, when teaching information or skills that we expect will change during the student's working life we can use pedagogical methods similar to those that the graduate will use to accomplish this updating.

A generation ago technology seemed fairly stable. Now, with the proliferation of computers, technology seems to be in constant flux. Both software and hardware are constantly being updated. New releases of older programs appear every few months. Hot new software relegates older programs to the scrap heap. Last year's new computer is obsolescent this year and obsolete next year.

Keeping up with the latest technology is further complicated because the introduction of the new does not signal the immediate departure of the old. Businesses adopt a new technology when it is economically justified and as a result, in most workplaces, there is a combination of old and new technology. (A case in point is the range of personal computers at NHTC, Claremont. There are several generations of I.B.M. type machines ranging from 8088s to 486s as well as MACs, Kaypros, and two types of Apple IIs. These machines use different software and different releases of the same software.)

We expect that the graduates of our institutions will spend their careers in technologically advanced workplaces and, as the technology in their field

changes, they will need continual retraining. For many of our graduates, we expect that much of what they learned in school will be out of date within a few years after the completion of their formal education. For this reason, it is important that students in technologically oriented fields be taught how to learn, how to use the techniques of critical thinking, and how to do research in their field. It is also important that these students graduate fully prepared to start work. The task facing us as faculty in New Hampshire's Post-secondary Technical Education System is to train our students in the current technology while we are educating them so that they may train themselves in the technology that will face them in the future.

An approach that may bear fruit is to look at the types of materials that are now supplied with new developments in existing technology. Typically, these materials include manuals, catalogs, and data sheets. Computer software and hardware manuals are notorious for being thick, poorly written, and not well organized. Almost all of these resources are very different in terms of organization, level of language, and completeness when compared with the text materials with which both we and our students are familiar. One of our tasks, then, is to teach our students to use these materials as they are used by practitioners in the field.

The first part of that task is to teach our students to read carefully and with understanding. The second part is to teach them to use what they have read to complete some assignment.

These tasks present many complex problems and, as John Kenneth Galbraith has observed, "There are many simple answers to complex problems, all of them wrong."

The difficulty in finding a single method, or even a small group of methods, to perform those tasks is compounded by the wide range of careers for which our students are preparing. For example, pedagogical methods used in the training of students in health related fields, who usually must pass an exam before being fully qualified, may vary from those used for students in business and industrial programs.

Pedagogical methods may also be affected by differences, either real or perceived, between program courses and general education courses. Most program faculty with whom I talk feel a great deal of pressure to train their students in the most up to date techniques and on the most up to date equipment. This pressure may not be as great with general education faculty.

Pedagogical approaches may also vary due to the nature of the material being learned. In most cases the science that underlies the various technolo-

gies we teach does not change. The laws that govern the behavior of beams are the same laws that Galileo investigated. The veins in our bodies are in the same location they were in when Leonardo da Vinci first drew them. What has changed is the nature of the material out of which the beam is made and the medical procedures that will be used to transfuse blood into those veins.

A student who has learned how to find the centroid of a beam or who has learned the characteristics of hemoglobin will never have to relearn that information because it will not change. The student will, however, have to learn the characteristics of the material out of which the beam might be made or the characteristics of a polymerized hemoglobin compound used in a blood substitute, not once, but many times as the technology changes during his or her career.

When, as faculty, we look at various pedagogical methods, all too often we feel pressured to computerize. Interactive is the latest buzzword. Libraries are now Learning Resource Centers. Computer labs are devoted to the use of educational software.

There is a problem with this approach to education. We need to take a closer look at interactive computerized learning software and ask two questions: "What is it that is being learned?" and "Is this the best way to teach what it is that we want to be learned?" The first question is critical. As anyone who has taught knows, what we think we are teaching is not always what was learned. The second question is more complex than the first. If we are to teach so that our students can learn efficiently we must tailor our pedagogical methods not only to the learning styles of our students but also to the demands of the material and of the profession.

Computerized instruction is not always the practical way to learn new skills. For example, although I commonly use a word processing program I was not familiar with WordPerfect. Because this article needed to be submitted on a WordPerfect disk I needed to learn a new software program. I needed to upgrade my skills. My resources were **So You Want To Use WordPerfect To Do A Paper!**, a pamphlet written by Linda M. Gibson, then a student at NHTC, Claremont, and a plastic card that fits over the function keys on my computer Keyboard and identifies their specific functions in WordPerfect. Both of these were courtesy of the computer faculty at Claremont. A certain amount of one on one instruction, limited more by my pride than by a lack of forbearance on the part of our computer faculty, was also available. By a

process of reading, trial and error, and instruction, I learned enough WordPerfect to write this paper.

Our graduates will have to learn new technologies in the same manner and with the same types of resources as I learned WordPerfect. If we are going to equip them to keep on learning into the twenty-first century we must allow them to practice learning using the types of resources that are commonly available in the workplace. As faculty we should not boast "I teach high tech in a high tech way." Instead, we should concentrate on helping our students learn both professional skills and learning skills so that we can say that they will be employable upon graduation and throughout their working life.

LEARNING FOR LIFE

Sandy Cole

In a skit on **Saturday Night Live** a few years ago the good "Father" Guido Sarducci offered a five minute university education to students willing to pay his nominal fee. He guaranteed them the same amount of knowledge an average person remembers ten years after college graduation. For this fee Father Sarducci would share a one sentence kernel of basic knowledge from each college course, such as "Economics- The Law of Supply and Demand." After he had passed along all his gems, the student was awarded a degree.

It struck me then that all the memorizing for tests, stuffing of soon-to-be-forgotten facts, was of little importance in the long perspective of people's experiences. If I wanted the major substance of psychology to be of value in the lives of my students, I had to rethink my ways of encouraging them to truly integrate the material presented in the course. By devising methods which would encourage grappling with "the facts," translating them into a form students would actively use in their everyday lives, I hoped they would leave psychology with a large and valued store of integrated information which they could use throughout life in understanding themselves and those around them.

A tree serves as a model for conceptualizing both my view of education as a whole, and these methods of teaching psychology in particular. Life experiences serve to build a strong trunk from which knowledge of particular areas branch out. Facts and terminology provide the "leaves," continually growing in number, filling out the tree. For psychology the trunk holds all observed and studied knowledge of the behavior of self and others. Separate branches hold knowledge of specific facets of human behavior: perception, memory, consciousness, learning, development, motivation, psychological disorders and others.

In living their lives, students have learned many pieces of information which leaf out these branches. Some of these pieces of information are accurate, lacking only the scientific language and theoretical framework which will bond them more securely to the branch. Other learnings may be invalid and must fall from the branches like deciduous leaves, refoliating the psychology tree of knowledge with wisdom that students can count on in their lives. My job in teaching, then, is to help students analyze and evaluate those things that they believe to be true, as well as accumulate more usable pieces of information which will become a part of and strengthen their "psychology tree."

Over the past five years I have developed several methods which I believe have encouraged students to build stronger trees and "leaf them out." Journals, Digestion Exercises, and Life Long Learner Collections encourage the making of connections between daily life experiences and course learnings. This method may be of value in many programs of study because it realigns students' perceptions in their daily lives, focusing them on the ways in which the discipline's principles are of practical use.

My first digression from the familiar read-and-take-tests course format was to offer an alternate option. Students could choose to write journals, connecting new knowledge and terms they were learning in psychology with their "real life" experiences, past and present. They were cautioned on a sheet of directives that they would have to "grapple with the material at a greater depth" and "spend at least as much time 'thinking psychology' as those who follow the traditional course." From the beginning, many students have been interested in this option, approximately half choosing it each semester. At each of the six test times, they pass in a journal covering the same topics on which the others are tested. The journal directives have evolved over these past four years to include:

1. State your ideas clearly and concisely.
2. Show evidence of thought beyond what is presented to you in the text and in lectures.
3. Link ideas from various psychological topics whenever possible.
4. Use examples from everyday life to illustrate what you have learned.
5. Describe new understanding of past events in your life in the light of new learnings.
6. Relate proposed changes in your future behavior as a consequence of new learning.
7. Use terminology and concepts from coursework as prolifically as possible to firmly connect your ideas with the course.
8. Avoid using the journal to analyze yourself, except if the portion of you that you are analyzing is the chapter topic.

9. Never copy from the book! That is plagiarism (illegal) and doesn't prove you know anything except how to copy words. Using your own words is better; translating into your own experiences is far superior.
10. The bottom line is — **demonstrate that you have learned.**

Students have devised wonderful ways of connecting psychology with their lives. A favorite lecture example of classical conditioning was given to me by a student whose father trained coon dogs. In order to condition dogs to avoid tracking deer, each dog was tied in a feed sack doused with deer scent, hung on a tree limb, and spun till he became nauseated. It is an unpleasant image but one which is both clearly illustrative of the principle and virtually unforgettable.

One student described the emergency workings of her autonomic nervous system when her child was hospitalized, while another described her use of perceptual principles on a twilight walk along a country lane. Very creative students have written arguments over theory between Freud and Piaget and told how their perceptual processes fooled them into believing in the existence of their grandfather's ghost. Another narrated a life story from the viewpoint of a maturing fertilized egg which grew into a child who appreciated the adolescent eccentricities of his babysitter and mused on the life stages of his parents and grandparents.

At the bottom of my Journal Writing Sheet is this little analogy which sums up my feelings about journal writing in the best form I've found yet.

"Journal entries can be chewed and spit back out. It is much better if the information is thoroughly chewed, digested, and then issued forth in a new form."

Thoroughly digested journals get the best grades.

Grading journals can be more subjective than grading objective tests. I find that keeping the ten journal writing directives in mind gives me a framework for making those judgements. Comprehensiveness and synthesis of material with life experiences is what I value most. Grammar and spelling take a back seat in my grading process, although I will make corrections for the student's own use if requested as a means of improving writing in general. My feeling, which has yet to be illustrated by comparing scores on pre- and post-testing, is in agreement with a student who stated:

"The journal writing was very interesting. I thought this would be easier than testing. But I had to put a lot of time and concentration into these. I think I got more out of this than I would have doing the tests."

The concept of integrating course material into students' daily lives led to a second component of the course. I now assign four to six "Digestion Exercises" which are required of **all** students and require them to delve more deeply into one topic or to draw together their ideas on several chapter topics. Examples have been:

- Working through Goal Setting Exercises
- Practicing Stress Relieving Techniques
- Comparing a Computerized Learning Styles Inventory with results of two "Right Brain/Left Brain" tests
- Devising and utilizing a behavior modification plan
- Explaining how a Values Clarification Exercise demonstrates who they are in terms of their developmental history and personality theory.

These exercises involve incorporating learnings from topics in psychology which are separated in their presentation, yet often work in conjunction in real life situations. When students are asked to experience something which may be of benefit to them in the future, the dividing chasm between course learning and real life is bridged, making it easier for them to begin to see one as an extension of the other.

The "Lifelong Learner Collection," another assignment required of both journal writers and test takers, asks students to become "leaf collectors" for their tree of psychological knowledge. At the beginning of the semester, students are requested to become "collectors and coordinators of psychology-related material" they encounter during the semester, whether in conversations, commercials, TV shows, books, magazines, other courses, or real life experiences. One person's collection might include a Doonesbury comic strip that illustrates the Oedipus Conflict, several articles from magazines annotated by the student to explain which psychological topic is relevant, descriptions of social situations in which behavior modification was put to use, an explanation of motivational techniques utilized in a particular television commercial, a discussion of song lyrics which seem to suggest bi-polar mood disorder, and an explanation of greater understanding of a peculiar topic on an Oprah show. Those items they collect are to be turned in during the last few weeks of class.

My hope is that this exercise helps students to realize that "increased awareness of the usefulness of what you learn (and the assimilation and accommodation of that knowledge) will greatly increase its value to you." The momentum of learning, begun at the college, might then carry over to those post-graduation years. Graduates will have trees increasingly laden with new ideas about the subjects they began to study here.

My students frequently tell me that they remember much more of what they learned by connecting it through these means. But its value to me as an instructor doesn't stop there. Some of the most vivid real life examples of the concepts I teach have been introduced to me through the writings of my students. Their insights and Life-Long Learner compilations expose me to new ideas and facts I might otherwise have missed. While I am trying to help them become the best kinds of students they can be, they are helping me to broaden my knowledge and to become a better teacher. It's a learning partnership that leaves all of us with a few more gems of wisdom than Father Sarducci would have delivered for his degree.

STUDENTS AS TEXT

Nancy Marashio

> "....realize the obligation that is important, that the language of a person is a road from inside himself to the outside, and from that outside of himself to inside. It is always a continuing motion, never ending."
>
> — Simon J. Ortiz

As faculty, we react angrily when we are asked for input and our input is ignored or contradicted. Even in areas where we have developed the most expertise, we lose confidence, feel like slinking away when our direction is rejected.

Since freeing ourselves to take stands raises our fears of failure, think how our students feel when they take the risk of giving serious and committed responses. They answer from their position as learners, as individuals in the process of struggling with both successes and failures.

As faculty, how do we accept our responsibility to work with student responses to further learning? Are our students free to make choices only if they choose what we want them to choose? Having developed our own ways that work, would we rather insist that our ways are THE ways? Or do we acknowledge that, like us, students lean toward their own ways, whether we as educators resist or support, and THEIR WAYS also WORK.

Educate means "to lead out," to assume that strengths and needs already exist within the learners. On the first day of Prose I, students are asked to write their strengths as writers. Typical answers are about strengths but not as writers: *"My sense of humor and love of life* ***will*** *be my strengths"*; *a genuine interest in writing"*; *"I'm passionate about a topic (I* ***feel*** *strongly about what I write)"*; and *"unknown at this point"*. Asked to write about fears, students begin to move through the writer toward the writing. One student responds, *"My greatest fear of writing is of the unknown. How will I do? What will I be asked to write about?"* Another answers, *"That no one will like what I've written, that maybe it really is bad"*. In their honest responses students are ably identifying key issues that we must address in our writing class, and their heads nod as they read such syllabus emphasis as:

- Confidence is definitely one area that requires work.
- A joy and a frustration of Prose I is that you will feel yourself improve; the joy is that you will do really fine writing about something you've learned how to write about, and the frustration is that what you've done so well isn't enough when you turn to the next challenge.
- The writing may be fragmentary or whole, a search for an idea or a polished completion, on one topic or many — "whatever you think is best."
- Much of the work is finding YOUR way to see what you mean and to say it so others will see your meaning.
- We are in this together....We'll share both what works and what needs work.

From the beginning in Prose I students are expected to write drafts, write responses to their own drafts, then read drafts aloud to the whole circle of their classmates for wider response. Often silence envelops our classroom. My response to silence becomes another kind of text. Instead of filling the silence, often I must remind, "I'll wait for **you** to respond." Slowly, over time, students see that their papers and their responses **must** be "whatever you think is best," for their papers and their responses become the texts for the whole class.

For example, given the direction to write an observation, students produced a wide variety of drafts. Asked for responses about how the assignment worked, Pam felt limited; Bruce responded that my direction raised his need to ask himself not what he intended but what the teacher was looking for; Tammy preferred being directed, preferred being given focus and boundaries. Listening, I acknowledged that what limits one student, can free another; what frees one, can limit another. Only then did students relax into open discussion of what limited and freed their own writing and of what each needed to do next.

Sharing responses helps students realize that, despite their surface differences, one of their major likenesses is that none of them come with built-in faith in their own ability. Learning to seek what recurs, what is alike, what underlies differences, by mid semester Pam felt free to write: *"To be honest, when I first started Prose I, I entered the class with much apprehension and doubt. I feared I lacked the ability"*. She was able to add, *"I can now see more*

possibilities than I could in the beginning. Putting aside my fears of failure, I now look forward to writing in ways I never thought possible." Pam's fear remains, but she becomes able to respond beyond that fear to "possibilities" and "ways." She accepts that each response will be treated as an opportunity for more learning or for redirection of learning. Instead of focusing on short-lived sparks of worry, she seeks to kindle fires of learning where always there is a phoenix attempting to rise. Even Jean's change of just one word from a passive "acquired" to a more active "achieved" helped us all acknowledge that her progress didn't just happen; she earned it.

Asked, students continue to remain honest about revealing where they are and where they feel they need to be. Having come to realize that it is okay that each is in a different place, they begin to **want** to hear how they seem to contradict each other.

For example, as part of one self assessment five students wrote in response to the request for in-class "notes" to 1) self, 2) an authority such as a department chair or a boss, and 3) me as their teacher. Read down and notice in 1) how each writer sees two sides, in 2) how each is looking ahead to a next learning, in 3) how each student is helping to find the place s/he most needs responsive intervention. Read across, student by student, and see their patterns of strengths and needs.

- Cameron -

1) to self	**2) to an authority**	**3) to teacher**
I'm still in a fantasy click....I have to apply myself or....	*....most of which I have problem with due to the lack of total effort and the things like myself I must face*	*....I busy myself in denial and illusions and when something comes along that tries to shatter those barriers Itend to run. You are this large room of mirrors that show me myself no matter where I run.... I'm drivingthe car and you'rein the passenger seat, just giving me directions, and letting me drive.*

- Tammy -

1) to self	2) to an authority	3) to teacher
Try to think positive; even though my writing isn't the same doesn't make it worse.	*I'm surprised about how much there is to learn about what I already know. I'm improving my oral participation which has always been an obstacle for me.*	*It seems like the more I learn, the worse (or less) I write. I understand that trying new things are difficult but, frankly, the ideas don't come. I'm very disappointed in myself. Everyone else seems to be moving forward, and I'm going backwards. THE IDEAS WON'T COME.*

- Bruce -

I think I'm making progress in my writing, even though I sometimes feel that my thoughts are stopped.	*I look forward to writing information to you....*	*Who would have thought that after eight weeks I would be at the point that I am. I keep finding it harder and harder to stop the thoughts from coming at odd times.*

- Jean -

I'm sometimes my own worst critic, but I like how you have been helping me in dealing with and getting me through actual "school!"	*I look forward to ....*	*I get inspired by hearing my classmates' writing....I never feel tired during Prose I!*

- Pam -

1) to self	2) to an authority	3) to teacher
I felt uneasy and unsure of myself at first, but now my confidence has been built with my earlier attempts at WRITING.	*I will look forward to using those newfound skills, and I'll be willing to assist you in quarterly summary preparation.*	*Opening the door, you've allowed me to enter, sometimes with apprehension and fear of failure....you've added challenge too, by change and by adding new ways to increase my writing abilities.*

Such responses, shared with both the class and me, enlist all of us in an attempt to participate actively in response to the responses, trying to discern what comments from others feel most appropriate to the goals each is working toward.

Each writer circles from a choice, to articulation of what strengths and needs result from the choice, to more choices. The refrain "whatever you think is best" comes to mean each writer's freedom to make "whatever" choices really seem best for the changing work.

How do students view this freedom to respond openly to their own work and the work of others, to make their own determinations of when papers are satisfactorily completed, to write with their own genuine involvement and commitment? Vicki responds, *"I long for freedom, but when given it I have to find the concrete in it myself. This is not easy."* But Vicki's response helps make it easier, for she clues us to that need for finding the concrete. In probing for the concrete I ask for other responses. Tammy writes, *"Nancy gives us an open field to see what we can grow. I thought that would make things easier, but actually it seems harder for me. If I were given a small plot, and could only plant what she wanted, most of my options would be eliminated. But, for the first time, I choose what to write....Okay but what do I write? I'm still having a great deal of difficulty in that area....Nancy told us that climbing the staircase to the unknown was going to be difficult, but I had no idea that the struggle would be so great."*

As the struggle with freedom continues, I still hear an occasional, *"Ya but, is it okay if mine is different?"* But more often come the papers like Cheryl's affirming: *"I think the most important first step to any process is to not go*

into it thinking you will fail. I spent two semesters avoiding Prose just for that reason. It is like anything else — when you have your mind set in a negative way, you waste precious time just to correct this."

Free to succeed in their own ways, students travel the road from inside self to outside, writing papers and speaking responses. They travel from outside back inside by working with responses from others and by using revision as an opportunity to make multiple and serious changes.

Freedom to choose and to change obligates students to continue to merge that inside with that outside. Jean connects her past work as doll practitioner with her present work in writing:

> *Every doll I touched I did so with love. Their being was now entrusted to me, and that gave me a great sense of pride and accomplishment, but it also brought into play another emotion — fear.*
>
> *...in order to complete the task, I had to systematically and lovingly go inside myself and extract the feelings, the emotions of putting everything together....I began to see that it did have potential if I kept with it and attempted to work through the many changes that it required.*
>
> *....I must have changed that doll's features fifty times, and it wasn't until I took the time to realize that the process that was supposed to be fun and exciting was giving me a back and headache that I realized I was trying too hard....we have to be brave and walk away from it sometimes. And remember, that's O.K. as long as we do not walk away in defeat....come back totally renewed....with a fresh outlook....*
>
> *Writing processes....don't always come easy. Almost scientific....Writing frees us, unleashes thoughts and ideas one never dreamed they would be able to express. It gives us courage and determination, qualities some of us never admitted to having.*

Pam connects from older past:

> *....memories of my grandmother resurface in my mind. Methodically her hands work the yarn, wrapping, twist-*

ing, and pulling it along with her needles. Magically, the once lifeless strands of yarn begin to take shape, one stitch at a time. Slowly the stitches build upon one another, as the piece starts to emerge full of life and beauty.

Both the knitter and the writer are capable of creating a one of a kind unique piece.

I have faith that each of our students comes to us as "a one of a kind unique piece." Each has "thoughts and ideas one never dreamed they would be able to express," "qualities....never admitted." To the degree that we believe in our students and in ourselves, our obligation must be to free them to find, to share, and to respond to THEIR strengths. What results may not always be what we plan or expect, but the results will reflect learning for all of us, honest learning, learning that becomes never ending.

For their insights I am grateful to Tammy Amos, Pamela Beauchene, Cheryl Hayward, Vicki Hedges, Bruce Maville, Jean Sirois, and all of my students who keep me aware of what matters most in teaching -

Section III

A CERTAIN ART

WHAT TRANSFORMATIONS HAS TAUGHT US

William V. Wheeler

At NHTC-Laconia, "Transformations" refers to an intensive eighteen week, 540 hour educational experience that utilizes a carefully sequenced curriculum, a combination of instructional methodologies and a class schedule based on the belief that learning is literally a full time job. Originally intended to be implemented by the College for inmates of the Department of Corrections Lakes Region Facility, Transformations has proven so effective that it has become a model for the development of other educational programs at both NHTC-L Campuses. Transformations has become a valuable asset to the College, and it has taught us a number of important lessons we think are of interest to our colleagues:

1. Research is necessary for program planning. This sounds self-evident. However, program planning is frequently done without surveying relevant research. Or, research is surveyed without a clear formulation of what is being sought and consequently the survey lacks a clear purpose.

In our planning the first step was to carefully formulate the educational problems we were trying to solve. Secondly, we reviewed a large quantity of research and discovered that there were curricular and instructional solutions to every one of the problems. Thirdly, we identified what the key programmatic implications of the research were. Finally, we translated these into specific program design characteristics. Using this research process, we were able to find the Transformations model (originally developed by the Center for Occupational Research and Development for curriculum components and instructional methods). Carefully reviewed research provides a basis for making informed and creative decisions.

2. Developmental education is an effective means of recruiting and retaining students. The Personal Development Lab at the NHTC-L North Campus provides students with individualized, non-threatening instructor facilitated education in a wide variety of subjects, from basic through advanced skills. Students use the Lab for GED study, preparation for college courses, homework, and satisfaction of personal educational curiosity. It is an environment in which many students get "hooked" on learning and on seeing themselves as students. It has proven effective in recruiting applicants for Transformations.

When they first begin to use the Lab, most students have the modest goal of improving their basic reading, language or math skills in order to lessen their daily struggles with words and numbers, and qualify for a better job. Getting a GED seems to be a very formidable task and educational goals beyond that (like Transformations) seem impossibilities. After a short period of time most of these students begin to see themselves as successful learners. Moreover, they find that progressing from one grade level to the next does not take a whole year! This discovery gets them past their previously held (and very discouraging) assumption that each grade level takes one year to master. These twin discoveries of seeing themselves as successful learners and seeing educational goals within reach create confidence, job and a tremendous sense of being freed.

3. Faculty and students can work at teaching and learning all day every day. The following charts illustrate typical Transformations schedules:

INDUSTRIAL TECHNOLOGY PROGRAM

8 am	Computer Foundations	Graphics for Technicians	Mechanics & Fluid Power	Electricity & Electronics	Technical Option
	Workplace communications	Industrial Chemistry		Quality Control	
	Lunch				
	College & College Math II	Physics I & Physics II			Technical Career Success
4 pm	Self Study				

18 Weeks

I think we were all initially skeptical about whether such a schedule was practical. Could students and instructors teach and learn well from 8 A.M. to 4 P.M. every day for eighteen weeks? Those of us who had taught traditional college courses were all familiar with the usual attendance problems and complaints from students about the "work load" of twelve to fifteen class hours per week. The Transformations schedule appeared to have two possible outcomes: students and faculty would burn out quickly, or the work would have to be diluted and expectations lowered.

Neither outcome occurred. Instead we found that both faculty and students easily adapted to the schedule and see it as a primary reason for the success of the Program. Daily contact with course material and learning activities fosters a more intimate relationship between student and subject matter. Learn-

ing becomes a more prominent focus in the student's life and this results absolutely and proportionately in more time spent on task. This naturally leads to better learning and study habits and accelerated rates of learning.

4. All students will achieve high levels of performance only if given frequent opportunities to learn and solve problems in the presence of faculty who observe, intervene, and coach. In other words, we must devote more time and attention to monitoring the **process** of student learning instead of relying primarily (often exclusively) on evaluations of the **products** of learning. Only if we observe students "doing learning" can we identify their learning process errors, make appropriate interventions, reduce the range of variation and increase mean levels of performance. Reserving observation and evaluation for products (quizzes, exams, projects, etc.) is observing and evaluating too late.

The Transformations schedule provides faculty and students time to concentrate on learning processes, and the "laboratory based" approach to learning gives students ample opportunity, working individually and in groups, to engage in learning tasks while faculty observe, intervene and evaluate. The importance of this aspect of the program is hard to overstate: the extensive time spent coaching enables all students to perform well.

5. Collaborative learning dramatically increases motivation and performance. Student collaboration in small groups fosters mutual support and a collective sense that learning is "the job" they are together to do. Our students exhibit high levels of motivation and mature attitudes. The distinction between providing mutual assistance and doing some one else's work is maintained: students have no trouble telling the difference and confronting one another on matters relating to honesty and personal responsibility.

6. Computer assisted instruction, to be effective, must be carefully integrated with curriculum, classroom activities and homework assignments. As NHTC-Laconia the most frequently used and most extensive resource for computer assisted instruction is software known as PLATO. It has become an important ingredient in the total learning experience of Transformations students. We have discovered, however, that in order for students to benefit from them, these computer programs must be carefully integrated with the classroom activities and material. We "customize" the PLATO learning routines so that they complement classroom learning. Computer assisted instruction is a powerful adjunct to classroom learning if instructors use it carefully and knowledgeably. If instructors do not use it in this manner, computer

learning software remains an unrelated element of the student's learning experiences and requires effort that outweighs its benefits.

7. Students do not need a GED or high school diploma to successfully do college course work. In fact, we have found that students need only an eighth grade achievement level to do work typical of freshman college courses. Over half of out Transformations students entered the program without either a GED or a high school diploma, but as long as they were al le to read and do math at the eighth grade level they were able to be successful students in all of the Transformations courses. This has overwhelming implications for high schools. How many adults are needlessly denied entrance to college for lack of a GED? Might it make more sense to test for ability and competence instead of requiring a diploma? Does failure to satisfy high school graduation requirements lead logically to denial of subsequent college opportunities? All Transformations students who do not have a GED upon entrance to the Program easily obtain it before graduation. If all Transformations students had to have a GED prior to beginning the Program, many would never enter. That would be a tragic loss.

Transformations has been an exciting, unique opportunity for all of us involved with the Program. It has been a "laboratory" experience that has permitted us to do some things that traditional approaches to college instruction do not easily allow. Many of our previous assumptions about teaching and learning have been shaken and rearranged. We will continue to "fine tune" Transformations, to experiment with new applications, and to share our experiences with our colleagues.

"WILL THIS BE ON THE TEST?": A Few Nuts and Bolts for Applying Critical Thinking During the First Week of Class

Gene Rice

A. APPROACHING PERFORMANCE BASED LEARNING VIA CRITICAL THINKING

Critical thinking is a hands-on, performance based methodology in which the student regularly performs the tasks of solving problems, making decisions, and doing projects in which s/he must figure out the solutions, alone or preferably in groups. Any substantive learning can be immediately assessed because the student must actively demonstrate orally or in writing on a daily, even minute-by-minute basis, what the syllabus says s/he ought to be able to do.

Our Manchester task force appointed by the President believes that critical thinking is admirably suited pedagogically to instill Performance Based (student driven) Learning. The operative word is "performance". The student does the sweating rather than the teacher. Traditionally, the instructor finds him/herself exhausted putting on a classroom performance while the student either blissfully slumbers or as the famous Doonesbury cartoon has it, attentively scribbles, scribbles, scribbles, missing the point completely, his/her only question being, "Will this be on the test?"

An often cited misunderstanding about critical thinking methology is that it consumes an inordinate amount of time, consequently, content is sacrificed. But, as a matter of fact, critical thinking will hardly lay a finger on the content of any course but merely on the method of delivery. True, the usual and customary amount of material may not be covered, but when you weigh "being covered" as opposed to "being learned" the preponderance of the evidence comes down on the side of critical thinking instruction. Every business and industry is searching for employees who can read, write, listen, speak and think critically. They will happily train the thinking person to overcome any scientific or technical omissions.

One of the significant rewards of employing critical thinking is witnessing rare excitement about learning. Not all, but most students who get into the swing of critical thinking suddenly experience enjoying coming to class because they are "in charge" to a great extent, their ideas and insights are re-

spected, serious discussion is the format du jour, and although rigorous assessment comes at them daily and inexorably, they experience emancipation from the baby robin syndrome wherein they typically regurgitate premasticated materials. Since pre-school, students have learned how to beat the system or work the system by parroting expected answers for a good grade. In a critical thinking class, it is virtually impossible to parrot.

B. GETTING STARTED: THE FIRST WEEK

I would like to outline a small number of the tried and true nuts and bolts of delivering education using a critical thinking methodology and stick within the first week. Getting off on the right foot is crucial to success. Most students are unfamiliar with the theory and practice of critical thinking; hence, plenty of time must be allowed initially to explore this methodology and allay fears ground into them since kindergarten. Week one is privileged time for the instructor to set the tone and shatter any "cast in stone" misconceptions. Giving time for some type of icebreaker serves to get them relaxed and talking with one another and with the instructor. After all, they are going to spend a lot of the next eight or sixteen weeks interactively figuring out problems and questioning one another.

It's a capital idea to seat them in a circle or semicircle. Make sure to involve them in every step of the procedure by asking, "Why are we doing this?; Why are we doing that?" They quickly note that the circle is much better guaranteed to stimulate discussion than the ecclesiastical (church pew) configuration. Staring at someone's backside rather than their face surely inhibits the facile flow of thought.

It is no waste of time to discuss the etymology of the word "education", educere (lead forth; guide). To educate is to clearly define and differentiate the role of guide as opposed to the one being guided. It is stimulating, even shocking to most students to discover that they and not the instructor are the ones responsible for their education. Since day one, they have been indoctrinated to sit mutely and obediently as the teacher pours knowledge into the tabula rasa which is their minds. Once they grasp the fact that nobody can teach them anything without their cooperation, they are usually overwhelmed with the revelation that school can be interesting, liberating, and sometimes even fun. Sure, they will remain suspicious for three or four weeks about this person up front who may be "suckering them with some gimmick", and concerned that any moment now this class will reprise their previous unpleasant and possibly even harmful K-12 learning experience.

Even a cursory reading of the literature reveals that a critical thinking modus operandi is quite out of the ordinary. In most classrooms, your students will handily testify to this, so repeating phrases like "personal responsibility" and "demonstrate the ability to" will not sink in until daily, personal assessment proves the point. Students will be amused if not bemused when the person who completes the circle refuses to be addressed as instructor, professor, or teacher but rather requests the appellation coach, guide, or even midwife. Only time will prove to them that this relationship between them and the coach is symbiotic rather than adversarial.

Once you have them hooked, problems of discipline, lateness, and absences tend to dissipate. Critical reading exercises alternate with critical writing exercises. Critical listening goes in tandem with critical speaking. Over and over the question is posed, "How do you know that you know this material?" And they are forced to consider the obvious answer: When I am able to discuss the subject without notes, accurately and precisely, give cogent and practical examples and explain it in simple terms to my neighbor — then I know that I know. Whether in General-Ed or technology, whether in theory or practice, the student has to prove him/herself competent by answering the how do I know that I know question.

Every paragraph of every textbook under discussion is grist for this careful scrutiny. One focusing trick is, at the beginning of each class, to randomly draw a student's name out of a hat and make him/her responsible for accurately reviewing the past classes' material. This works only if everyone knows up front that this review is a graded exercise. If the student hasn't prepared and doesn't have much to say, s/he knows s/he has automatically merited a bad grade. Being unprepared doesn't pay and nobody wants to look unprepared especially when his/her neighbors are ready to contribute.

Try a policy of no absences allowed (except for serious and verifiable reasons). Since critical thinking depends on active participation in **every** class and students quickly learn that 98% of class time is spent demonstrating knowledge whether individually or in group, absences tends to become occasional. Let them know the first week that a willful absence is a breach of responsible studenthood.

Immediately form groups of three or four and keep these groups intact for the entire semester. Let them know that group work can be called for on the spur of moment. After a group topic has been assigned and chewed over, randomly select someone from the group to serve as reporter. Again, make this a graded exercise. The selectee is on the spot and good Socratic question-

ing on the part of the instructor will keep him/her on the gridiron for as long as the student can profit. This is not cruel or unusual punishment but rather a solid test of knowledge. Students enjoy it when the instructor announces: "O.K. The person in your group responsible for reporting is the one whose last name comes third in the alphabet." Or, "The student in your group with the darkest hair is the respondent." When you are the one whose feet could be held to the fire, you tend not to slough off. Obviously, a method of selection in which all cannot participate is invalid — "The one with the dirtiest sneakers..." when some are not wearing sneakers.

Another self-starting strategy is making some randomly selected student responsible as discussion leader for previously assigned homework. You and they find out pretty fast if they know whereof they speak. Incidentally, students quickly pick up Socratic questioning methods and use them regularly on one another. This causes the class to become both serious and animated.

In class, use of dictionaries, thesauruses, and calculators is encouraged to simulate real life situations. The same applies to rewrites of papers.

The critical thinking methodology, applicable in any course or curriculum, quickly teaches students how to separate facts from opinions, to sharply question their texts, the instructor and one another, how to take nothing for granted, and how to judge the value of personal opinion vis-a-vis demonstrated knowledge. They are encouraged to disagree with every point of view (or any way of doing things) as long as they have a solid reason for so doing. Mistakes are welcomed as powerful learning tools. As one can imagine, it is a mind boggling experience to witness the metamorphosis from classroom passivity and even hostility to active, aggressive cooperation.

Finally, a word on the paradox of playing down grades while still having to assign them. Destroy the enemy the first day. Typically, assigning grades is the most difficult task in the educational process. Students live only for grades while at the same time being in mortal fear of them. How often have you heard students in the hall discussing the **content** of a course? Does not their conversation only go something like, "What d'ja get in _____?" For students, grades are not everything, they are the only thing.

One simple solution to the grading debacle is to tell them the first day, "You will not receive a grade in this class until the last day. Forget grades. If you are always present, do your (home)work, and actively participate on a regular basis, you will amass a whole sheet of excellent grades, so you don't have to worry. Concentrate on learning; concentrate on competency; the rewards will come of their own."

Students will buy into this concept if it is presented positively and time proves the teacher honest. When students realize that letter and number grades of themselves mean virtually nothing, but demonstrated competency means everything, the problem of grading is just about eliminated. They can easily grasp that every homework, every quiz, every recitation well or poorly performed adds or subtracts from the final grade. The focus is on learning — nothing else. Close to semester's end hand them a sheet listing the course objectives and let them grade themselves. They will be tougher on themselves than you will be on them. By the way, punctuality in handing in homework is important. Even if homework is not formally evaluated, note punctuality in your gradebook. Save yourself time and keep them on their toes by grading every third or fourth paper. A cursory evaluation at midterm might be helpful for those still suffering from gradeitis. But in the long run they will thank you for removing the monkey of marks from their backs.

The greatest temptation for teachers attempting the critical thinking method is to lose your cool when nobody can come up with an idea and class seems to grind to a horrendous halt. Silence is devastating for student and instructor alike but by taking that little bit of extra time to require them to figure things out for themselves the high standards of accuracy, clarity, logicalness, and specificity will reap the rewards of independent thought and critical judgement.

After happily teaching college for 36 consecutive years, my only regret is that I didn't grab the brass ring of critical thinking until my career was largely over. The intellectual stimulation of the last 5 years, however, has more than made up for it. I wish you the same.▼

SCIENCE IS A VERB

Tom Gorka

WE LOOK, WE TOUCH, WE HEAR, AND TASTE AND SMELL.

WE CONTEMPLATE, WE HYPOTHESIZE AND WE TEST THE HYPOTHESIS.

WE CONSTRUCT MODELS FOR EVENTS, BOTH AT THE MACROSCOPIC, MICROSCOPIC AND SUB MICROSCOPIC LEVELS OF OUR CONTEMPLATION, AND WE TEST OUR MODELS. WE SCRUTINIZE OUR CONSTRUCTS FOR FLAWS, AND REVISE THEM TO ACCOUNT FOR THE ANOMALIES. FINALLY, WE ESTABLISH A THEORY OR LAW.

ALL OF THESE ACTIVITIES ARE ACTIONS. WE SCIENCE. AS CHILDREN, WE TORE THINGS APART IN AN ATTEMPT TO DISCOVER HOW THEY WORKED OR WHY THEY BEHAVED AS THEY DO. WE BIT THEM, SMELLED THEM, TASTED, LISTENED TO AND WATCHED THEM, AND ... (THEN WE WENT TO SCHOOL).

WE LOOKED AT PICTURES OF BIRDS, OF DIRT, CLOUDS, GEARS, PLANTS, BUGS - NO TASTES, NO SMELLS, NO TOUCHES, NO SOUNDS. PICTURES OF THE ACTUAL REPLACED, IN LARGE MEASURE, THE EXPERIENCES, AND WE SOON FORGOT THE PICTURES.

EXPERIENTIAL LEARNING IS FIRST ORDER - WE ARE THERE, AND WE DON'T FORGET FOR A LONG TIME. REMEMBER HOW YOUR GRANDMOTHER'S KITCHEN SMELLED - NOT AT A BIG EVENT LIKE THANKSGIVING OR CHRISTMAS, BUT ON SATURDAY WHEN YOU VISITED - EVERY SATURDAY. RECALL HOW YOU REACTED WHEN THE SKY MOVED AS YOU LAY ON YOUR BACK WATCHING THE CLOUDS, THE GROUND MOVING AS THE TRAIN RUMBLED INTO THE STATION, THE FIZZ OF AN ALKA-SELTZER - THE SODA BUBBLES ON YOUR NOSE. RECALL THE AMAZEMENT OF SEEING SPARKS WHEN YOU BROKE WINTERGREEN LIFESAVERS IN A DARK CLOSET OR SEEING A PICTURE APPEAR FROM A BLANK PIECE OF PAPER IN A DARK ROOM TRAY, BEADS OF WATER ON A HOT STOVE, THE FIRST SKIM OF ICE ON A POND IN THE FALL, A LIZARD CATCHING AN INSECT.

CAN YOU RECALL MORE VIVIDLY THE PICTURE OF THE FULL HARVEST MOON OR THE REAL THING? HOW ABOUT THAT GREAT PICTURE OF A RAINBOW OR THE DOUBLE ONE YOU SAW AFTER

A SHOWER LAST FALL? A PICTURE OF A STEAMING BLUEBERRY PIE MAY CAUSE HUNGER PANGS, BUT SIT AND SMELL ONE AND YOU SALIVATE - A RIDE IN AN XKE JAGUAR VS A PICTURE?

IN THE NAME OF EFFICIENCY OR CURRICULUM OR THE KNOWLEDGE EXPLOSION OR SOMETHING, WE HAVE OVERLOOKED THE ACTUAL AND REPLACED THE ACTUAL WITH A PICTURE - AND DISCOVERY WITH A CONFIRMATION ACTIVITY ALONG WITH A NEAT PERCENT DIFFERENCE CALCULATION.

WE MUST EXPERIENCE TO REALLY KNOW. THE STOVE IS HOT. JUST WAFF A BIT OF THE AMMONIA GAS TOWARD YOUR NOSE. SAMPLE THE CHILI CAUTIOUSLY.

WE MAY UNDERSTAND COMPLETELY THE CONCEPT OF GRAVITY AND ITS VARIANCE AROUND THE UNIVERSE, BUT WATCHING NEIL ARMSTRONG HOPPING ON THE MOON'S SURFACE, WE'LL NEVER FORGET.

LESS MAY BE MORE IF WE HAVE IT FOR LIFE. A PICTURE MAY BE WORTH A THOUSAND WORDS, BUT THE FLUID MOTION OF A SNAKE SLITHERING AWAY, THE SIGHT AND SOUND OF A HUMMING BIRD HOVERING AT A FEEDER, OR NEAR ZERO FRICTION OF GLIDERS ON AN AIRTRACK ARE MORE THAN WORDS.

LOOK AT THE CONSTELLATION "ORION" OR A DOUBLE STAR, THE SECOND ONE IN THE HANDLE OF THE BIG DIPPER, AND THE ILLUSTRATION PALLS BY COMPARISON - ALL THE SCIENTISTS FROM ANCIENTS TO THE PRESENT DID AND DO - **SCIENCE IS A VERB - LET'S SCIENCE!** ▼

HYPERLEARNING IN THE ELECTRONIC CLASSROOM

Doyle V. Davis

The word, **Hyper**, comes from the Greek word **Huper** meaning over, above, beyond or excessive. The word, media, means different things to different people. In the educational sense, I would define media as the educational tools that have developed over time to augment the standard lecture format. Material such as handout sheets produced from ditto and photocopying machines, overhead transparencies, 35 mm slides, 8 mm filmstrips, 16 mm movies, television, and more recently videotape and computer assisted instruction are among the media products that have been produced by advancements in technology. Each faculty member has a certain "comfort level" with each of these media products. Some faculty rarely use anything but handout sheets made on a photocopier as a supplement to their lectures. Others employ a wider set of media tools in their teaching style.

There is a growing body of research that suggests that there are different types of learners and that the use of multiple media tools enhances the opportunity for each student to master the skills and competencies of a course. Out of this research has come another interesting fact. The process of learning rarely occurs in a linear fashion. The mind seems ready-made to jump from one topic or concept to the next and back again. This non-linear "examination" phase of learning appears to be vital in the formation of conceptual links between ideas which promote true understanding.

Most programs of learning have been based on a linear format in which **time** is the common denominator. Faculty design courses by filling up a 15-16 week semester with what they think the **ideal** student should be able to master in this time. Little thought is given to the fact that the **real** students teachers work with each day come from diverse academic backgrounds with different learning styles. Many of these students have personal and financial constraints which further complicate their adherence to a linear time-based format of instruction. With the development of high-speed low-cost personal computers, a new set of media tools has become available to free both the student and teacher from the traditional two-dimensional time-based format of learning in which mastery of a subject is plotted against time.

It was in 1965 that Theodore H. Nelson coined the term **Hypertext** to represent nonlinear, non-sequential writing and reading. Nelson's vision was a multidimensional text with junctions to branch to extra material, definitions, and background information within the composite text. Out of this definition has grown the term **Hypermedia** – the inclusion of graphics, video, sound, and animation within hypertext environment.

One of the first examples of hypertext to be used at the New Hampshire Technical Colleges and Institute was the introduction of the on-line databases such as InfoTrak. Here, students can access vast amounts of information by searching for key words, titles, and author names. This rapid non-linear branching search and retrieval process is the hallmark of Hypermedia technology. System Learning Resource Directors quickly adopted the technology to their card catalog files. Students are now able to search and retrieve data for papers and reports much more efficiently than many of us did as students and still do as professors.

Today's personal computers have the speed and processing power to include still and moving images, sound and animation which can be stored digitally on either a fast hard drive or a compact disc in a CD-ROM drive. Interactive lessons can be built around these images using software products called **authoring systems**. Such authoring systems use object-oriented programming languages to create links between objects on various "pages" in an electronic paperless book which resides as a file on the computer's hard disk. For example, a lesson designer may create a "button" which when clicked with the mouse will cause the lesson to jump to another page or to show a movie clip in a window on the computer screen. "Video/Audio control" buttons can be created which let the student control a laser videodisc or CD-ROM player and rapidly search for a particular sequence of frames or an audio track. Even words themselves can be made "hot" so that if the student wishes to explore the meaning of such a word or its origin, he or she simply clicks on the word and its definition "pops" on the screen. This ability to rapidly search for new information; to jump from one idea to the text; and to bring forth images both still and moving is the true nature of Hypertext. **The process by which students learn using hypermedia tools is known as Hyperlearning.** The combination of video and audio with text and animation is an exciting new door which students can open to explore the words. As the system fellow in pedagogy, I have spent a major part of my fellowship introducing faculty at each institution to the use of hypermedia in teaching because I am convinced that it has great potential in a number of areas.

Hyperlearning will have a great impact on our **learning centers** by providing students the opportunity to explore self-paced teacher-designed help modules in many areas including spelling, reading, writing, mathematics, and science. Greater opportunities for success will occur when students can move at a comfortable pace with guidance from the computer and coupled with peer/teacher coaching. The ability to make a mistake in private, go back and try again until the concept is mastered is the ideal mode of learning for many of our students who hesitate to respond to questions in a standard lecture format.

Performance-based-learning (PBL) is a method of instruction which has gained increasing support and adoption throughout the country, particularly in advanced technology and health related fields. It is a way of learning by doing in which a student must master a set of skills or competencies by demonstrating or performing this skill in front of an expert. Hyperlearning has great potential here. Students may first watch digitized clips of a particular procedure. They may answer questions posed by the computer and receive feedback. For example: A student in a manufacturing processes program can learn how a machine works, see it operate in different modes by clicking on various control buttons shown in a still image of the machine, and see examples of improper or unsafe use of the equipment before he or she ever actually sees the machine in the laboratory. Pre-test performance exams can be administered by computer before the student takes the final performance exam.

Many students – particularly adult learners – are very motivated and can master material rapidly in a self-study mode in which Hyperlearning plays a major role. Emerging interactive video technologies will permit a computer to **assess a student's existing knowledge** of a subject or procedure and place that student at the proper level in a program of progressively more difficult skills. The teacher and student can design a self-study program for the student which will combine Hyperlearning with individual student-teacher conferencing.

Hyperlearning can occur in other ways besides individual self-paced instruction using interactive multimedia. Some of the most ardent critics of performance based learning argue that PBL tries to compartmentalize knowledge into nice little packages for students to feedback to the instructor while ignoring important communication building skills that are formed as a result of class discussions involving students and the teacher. They make the point that a skillful instructor in a lecture can share personal history and experiences with students, offer different perspectives and points of view, and solicit questions and foster discussion in ways impossible with individualized instruction. The strongest supporters of PBL argue that the standard lecture format

does little to foster real learning and that students might as well watch a video tape. According to PBL proponents, the communication between the teacher and student is basically through face-to-face verbal and non-verbal communication channels. The chalkboard is the teacher's preferred medium of instruction. Students sit passively taking notes while listening to the instructor. They also point out that class discussion in many cases involves only the teacher and one or two students while the rest of the class is not actively involved in the discussion.

Recent developments in information technology are revolutionizing the lecture format of instruction. A new high-tech learning environment called the **electronic classroom** is emerging which will be quite a different place in which to learn and also to teach. In such a room the teacher will have access to a wide variety of very powerful communications media. This media will be either permanently installed in the room or available through some type of mobile high-tech lectern which can access audio, video, and data networks. Consider the following examples of teaching in such an electronic classroom. These stories are not fiction. I either observed such teaching or interviewed instructors who use high-tech electronic classrooms during my first year as system fellow.

A biology professor at Indiana University Purdue University Indianapolis brings his Macintosh PowerBook computer and an interface cable borrowed from the media center to a room recently renovated into an electronic classroom. It takes less than two minutes to connect and set up his computer. He makes only two connections – one end of the interface cable is attached to a **multimedia communications wall outlet** (MCO) and another end of the cable to the video output port of his computer. The MCO provides a connection to the campus local area network, Internet, and the classroom sound system. There is only one way to plug in the cable, thus assuring a correct connection every time. As soon as the attachment is made, a ceiling mounted video projector in the room automatically turns on and is set for the Macintosh video standard. At the same time, a projection screen lowers from a position above a standard chalkboard. He shows his class a number of environmentally endangered plant species which he photographed, digitized, and stored in his PowerBook. He finishes his presentation and unplugs the interface cable from the wall and his PowerBook. The ceiling mounted video projector automatically shuts off and the projecting screen is raised.

A second teacher uses multimedia instruction in her class. Twenty minutes prior to class, she requests local AV technicians to deliver a portable high-tech

lectern which contains a VCR, a laser videodisc player, CD-ROM drive, a Macintosh and an IBM computer, and a 3-D document camera. Five minutes before class, the technicians have arrived and connected the lectern to the MCO wall outlet. The portable lectern has a special touch screen which shows a menu of options. She first touches the password button and enters a six digit code to activate the unit. A second menu appears which shows the various hardware available with the lectern and in the room itself. Next she activates the IBM computer, the laser videodisc player, the 3-D document camera and the sound system in the classroom. She can control the level of lighting and sound in the room with the touch screen as well. Her lecture is alive with various audio/visual images from the computer, laser videodisc player, and the 3-D document camera. At the end of the class, a technician arrives. In less than two minutes, the unit is unplugged and rolled into another classroom.

Perhaps the most interesting lecture I observed was given by a chemistry professor who was truly a master teacher. The lecture was given to a group of 300 freshman pre-med majors taking his introductory chemistry course in a large auditorium which had been renovated into a high-technology learning environment. There were three large screens in the auditorium and three ceiling mounted video projectors. Prior to his lecture, he came to the hall and removed a portable lectern like the one described above from a storage closet located on the stage. Within five minutes, he had powered up the machine and three images were displayed on the screens via three ceiling mounted video projectors. One image was from a Macintosh computer. Another was from an overhead 3-D document camera located on the lectern. The other image was coming from a laser videodisc player. He mixed his lecture with wonderful visual images. At one point, he rotated a crystal model beneath the camera to show the various atomic planes of the crystal. Later, he dropped a piece of sodium in a beaker of water. As the sodium reacted with the water, hydrogen gas was liberated. At this moment, he spoke of the explosive power of hydrogen gas and with the push of a button, brought up on a third screen the famous movie footage of the explosion of the Hindenberg blimp. The students were captivated by his performance and ability to bring forth powerful images to reinforce his verbal communication with them.

I relate these three stories to illustrate that an experienced instructor, when properly trained in the use of hypermedia tools, can produce a powerful Hyperlearning experience for students, even when the instructor is using the lecture format. It is through his/her skillful importation of audio-visual images integrated with the solicitation of questions and dialogue from the class

that a sustained interactivity is produced which is the hallmark of Hyperlearning. While I am personally a strong proponent of performance-based-learning and oppose the lecture method as a primary vehicle of instruction, I am not ready as some of my colleagues are, to abandon lecturing entirely. The **"power lecture"** as I like to call it, can be used even in courses which are primarily self-paced. There are times when all students who are taking a course (it does not matter where they are in completing the course) can benefit from hearing and questioning an outside speaker or seeing a demonstration like the one I just described.

There is a tendency by some people to fault instructors who are reluctant to adopt new technologies which promote Hyperlearning. It has been my experience that this reluctance does not stem from a lack of desire on the part of faculty to explore new ways of learning. The root of the problem has more to do with the learning curve and time requirements for learning the technology. Faculty need to have opportunities to attend training workshops to see how such technologies can assist them in their teaching. Classrooms need to be restructured to support these new teaching methods. Specialized labs need to be created for teaching mathematics, sciences, technologies, and the humanities using interactive multimedia technologies.

The New Hampshire Technical Colleges and Institute face an enormous challenge. How do we deliver the best education to students with increasingly diverse academic backgrounds in a time frame which maximizes their potential for success? Many of our students are adult learners who are struggling to manage family obligations and part-time jobs while managing a full-time academic course load. Others are part-time students with full time jobs who can only attend courses after work. With faculty loads exceeding twenty hours in many cases, the faculty have little time to give individualized instruction and help to students in need. Our learning centers make heroic efforts to provide peer-tutoring, one-on-one faculty/student conference sessions, and computer assisted instruction via such programs as PLATO to meet the needs of students who need special help.

How do educational institutions meet the needs of businesses and industries who are seeking highly qualified workers in advanced technology fields and expect graduates to arrive with certifiable skills and competencies? If there is any time in the history of New Hampshire's Technical College System where everyone must work together to satisfy both our students and our partners in business and industry, it is certainly now. If we do not foster, encourage, and develop faculty skilled in the use of Hyperlearning teaching strategies, our students and industrial partners will go elsewhere for training.

DESIGNING QUESTIONS TO HELP STUDENTS PEEL BACK THE LAYERS OF A TEXT

Paul Marashio

As a youngster, I asked questions ad nauseam. As an adult, asking questions is rare. As a seminar instructor, designing questions to spark students' critical thinking is a challenge. In an interactive learning community, appropriately designed questions are the essential tools in disciplining and fine-tuning students' thought processes and thus their ability to reason. Further, these questions should intellectually engage students in peeling back the many layers of a text.

Where does one begin? Starting a new journey into unexplored frontiers is filled with unexpected risks and hazards that challenges one's professional fitness. Yet, the intellectual exhilaration one experiences during this adventurous journey into the new pedagogical frontiers is invigorating. My quest for questions always begins with the text. Like a detective, I search the text to uncover the author's essential ideas, themes, images, concepts, meanings, and symbols. These discoveries are the grist for designing my questions that will help encourage students to probe, to understand, to clarify the text's meaning, and the students not only discover what they think about the text but also relate that discovery to themselves.

Once the seminar begins, new challenges loom for the instructor; How to keep a conversation going? How to jump start a stalled conversation? How far and how long do I allow a strayed conversation to continue? How to respond to an unexpected or off-the-wall comment? How do I deal with a student who dominates a conversation? How do I handle a student who uses foul language? How do I include reluctant students into the conversation? How do I involve an uninterested student in the conversation? All these questions raise the specter of potential hazards within the seminar. Yes, the instructor's initial question starts the conversation, yet with any active learning experience the students' conversation determines the direction of the lesson and since each seminar section has different students, the conversation takes on its own personality and direction. Consequently, decision making is a way of life for an instructor in a seminar. Many times the instructor can refer to the prepared questions to maintain the conversation, to pick up on a student's comment, to design a new question, or to tell the students they have strayed too far from

the text. When a student dominates a discussion or uses language offensive to the other students, then the instructor has the obligation to reprimand the student(s) for their inappropriate language either publicly or privately. Through active participation and active listening the instructor can better resolve and thus head off potential disruptive problems. Since this stage of the seminar is the most demanding on the instructor, how deftly the instructor traverses this minefield determines the seminar's survival and, obviously, its success as a viable instructional method.

During the seminar, I try to establish a smooth flowing conversation by mixing questions with thought-provoking, challenging statements or by offering comments integrated along with the students' conversation. This technique undercuts the stilted dialogue that might result from a question, answer, question format. At rare times, only when essential, will I play devil's advocate. When using this approach I often announce, "Let me play devil's advocate for a moment...." so the students don't feel manipulated by me. Students often smell a rat! Therefore, I believe the policy that pays the greatest dividends, especially in a seminar setting, is one of candidness.

Before I discuss designing questions, I want to introduce you to some various hierarchical levels of questions: i.e. information-seeking questions, open-ended questions, interpretative questions, speculative-hypothetical questions, and critical analysis questions.* Since the bulk of responsibility for one's learning in an interactive community rests with the students, the seminar can be a frightenly brave new world for these students; therefore, designing, implementing, and integrating well designed questions is paramount. With this thought in mind, maybe the best strategy is to proceed cautiously by structuring the beginning of each of the first several seminars with a didactic learning mode as an Ice Breaker. Information-seeking questions serves the Ice Breaker phase well.

Examples for information-seeking questions are:
List five major painters of the High Renaissance.
What did _____ do to _____?
What was the GNP of the US last year?
Describe the _____?
In what year was the Declaration of Independence signed?

* Source: Inspiration for some of the type questions comes from, C. Roland Christiansen et all, **Education for Judgement,** Boston Harvard Business School Press, 1991, Chapter 9.

Enough! You've got the idea. Information-seeking questions require students to recall the facts within a text. These are the who, what, where, when, why, type questions.

From the design of these lower cognitive learning level questions of the information-seeking variety, the emphasis shifts to the higher learning level questions. There are several categories;

Open-ended questions:

What are your reactions to _____?

What aspects of the reading were of greatest interest to you?

You are an advisor to _____. It is an emergency situation. A conference has been called, data is in the text.

What advice would you offer to _____?

Where should we begin?

An open-ended question might be a good follow up to the information-seeking questions because it requires students to collect the information and to formulate a viewpoint, and the students can comment without the fear of reciting the wrong answer. An open-ended question can also be designed as a motivator question to ignite the students' intellectual taste buds (to move students from the exterior into the interior of the text). Other high cognitive learning level questions are;

Interpretive questions:

What was implied _____?

Why do you believe that?

Why was the protagonist afraid of the course?

Would you want the protagonist for a roommate?

a friend?

Explain.

Critical Analysis questions:

What is your analysis of the problem

What conclusions did you draw from the data?

Evaluate the data.

Why do the pieces of art you have selected appeal to you?

Would you buy the painting?

Why?

Which room in your house would you hang the painting?

Explain.

Speculative/Hypothetical questions:

What if _____?

If your conclusions are correct, what might be the reaction?

Develop a dialogue that might have taken place between _____ and _____ on the merits of _____?

Present a Crisis Scenario.

Role Play.

High cognitive level questions should be designed to encourage multiple student responses. The responsibility of these type questions is to encourage the students to use the textual information to formulate and substantiate a viewpoint. Well designed questions require students to analyze, to compare, to differentiate, to apply, to role-play, to construct, to evaluate, to conclude, to appraise, etc.. These action words are an essential characteristic to a well designed question. Keeping this characteristic in the forefront while designing questions will ease the designing task and will help you to design questions for each of the hierarchical levels. I believe the instructor should design a lengthy list of questions, approximately twelve to fifteen for a lesson, as a contingency to a potential question misfire with the students. The greatest percentage (95%) of designed questions should emphasize higher cognitive learning levels. Since proceeding through the hierarchical question levels is not a lockstep procedure, you may start at any cognitive level.

Once I finish designing a series of questions, I review the higher level questions in search of Motivator questions. The Motivator question can plunge the students deeper into the text. Afterwards, I review the critical analysis and interpretive questions in search of a Focus question. This question focuses the students even more on the author's ideas. The Motivator/Focus questions offer a degree of structure to the seminar, and for those insecure students new to this Student as Teacher learning process, these questions act as a support line.

Warning! Designing questions is like walking through a minefield. The looming danger in designing questions is the instructor's frame of reference which unconsciously bullies its way into the question design. If this goes unchecked, then the students are led by the instructor's predetermined outcome. Clearly, this is a formula for failure! As you are aware, students see through charades and resent contrived learning experiences. As I design questions, a continuous assessment mechanism is in place to guard against the bullying frame of reference from intruding into the questions. When I have finished designing my list of questions, I review all questions to insure the questions ask what is intended and to challenge the students to travel inside

the multiple layers of the text. The final check for me against leading questions is to ask another instructor I respect and trust to assist in the review and assessment of the questions.

Now that your adrenaline is flowing and your excitement abounds, you are ready to implement and integrate interactive learning into your specific learning community. There are probably many ways to begin, but the one that worked for me was to jump in. Don't worry! Go ahead! Just do it! Remember, oftentimes students enjoy showing off to the instructor and peers what they know and what they think. As a reminder, when you ask your higher cognitive level questions, give your students time to think of an answer to the thought provoking question, to collect their thoughts, to mentally focus on the text so they can analyze, interpret, synthesize, etc.. During the seminar, consider making a friend of silence. Silence is the instructor's most important ally. Conversely, for the students, silence is an invincible enemy who inevitably conquers their reticence and, with victory, a conversation breaks out.

Although it is not imperative, consider using information questions to establish a comfort zone prior to proceeding into higher cognitive level questions. Then go on to one of your open-ended questions as the motivator question or even use a provocative general statement. I use the Motivator question to open discussion frequently. The Motivator should gradually dissolve any student fears of sharing their thoughts with the other students and their haunting insecurities about being wrong and thus condemned. Before beginning the seminar conversation, I sometimes call for a "five minute writing burst." This free writing helps the students to mentally engage and grapple with the question and the text. When the five minutes expires, the students are better focused and their conversation is even more thoughtful and probing. Another approach to establish a comfort zone is to divide the seminar into two smaller groups, using half the class time to answer a focus question with each group assigned a different position. When they come back to the seminar, each group shares and debates their positions. Another motivating activity to encourage student participation is to turn the seminar into a committee of script writers. Using several authors as characters for the seminar's play, the students write the script with the text of each author as the primary source for the dialogue. This activity demands student knowledge of the text, cooperation, and participation. Finally, both the instructor and the students can assess the learning from the flow of the students' conversation and the quality of the script. These are only several examples of approaches to encourage student interaction. As

you become comfortable with the seminar method, you will discover other ways for students to participate in the seminar's dialogue.

Like any type learning experience, continuous immersion into the technique improves one's skills. Also, regular student assessment of the instructor is a must for improvement. I know this is valid for me. Classroom assessment can occur daily, weekly, or even monthly. Make the assessment simple, asking three questions:

1. What are one or two specific things your instructor does **that help you learn** in this course?
2. What are one or two specific things your instructor does **that hinder or interfere with** your learning?
3. Please give your instructor **one or two specific, practical suggestions on ways to help you improve your learning** in this course.*

Students are astute assessors. Over the years, I have implemented many student suggestions that have improved my instruction and, consequently, the seminar as well.

Seminar instruction is exciting and professionally fulfilling. Everyone - students and instructor - in this learning community is engaged in the learning process, and many times the lines between students and teacher become ambiguous. At these times, students are teachers, teachers are students, together peeling away each individual layer of the text, intellectually travelling toward the text's core, continuously searching for meaning. ❦

* Source: Angelo, T.A. & Cross, K.P., **Classroom Assessment Techniques: A Handbook for College Teachers**, 2nd edition. San Francisco: Jossey-Bass, 1993, pp. 334-338.

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