



# The Forum

Sharing Information on Teaching and Learning

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## Signposts for the New Millennium

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This issue of the *Labyrinth/Forum* asks our authors: "How do you envision technology and education in the new millennium?" Since rich speculation about the future poses risks for the writer and certainly since even the best predictions often unravel overnight, this was not an enviable task. Usually, those writers who predict the future accomplish their task by preparing us for apocalypse or utopia.

Such is not the case with our writers; not once did I get a sense of excessive doom or far out dreams. Although we might have expected a "Brave New World" of technology where the much anticipated conquest of the virtual college threatens the demise of actual instructors, such a dire image was not there. Certainly the proliferation of technological devices and the reality of "information overload" was acknowledged. However, even these examples did not come with a sense of defeat but rather of new opportunities for integration. Nor did I encounter dreamy speculation in which next-millennium pedagogy will produce the perfectly self-directed and independent learner. Problem-Based Learning surely moves students in the direction of applying classroom education to real life problems, but it does not come without a realization of the instructor's changing role.

So, forget about any thoughts of dread or elation; each of our writer's articles is rooted in careful observation of current trends, experience, and a logical synthesis of these ideas.

Articles in this issue of the *Labyrinth/Forum*, give predictions about technology that "facilitates sound learning" and provides "flexibility." Its purpose is for efficiency not replacement. Such technology makes instructors "mentors" and these new technologies are really only "tools that increase interactivity with students." Nothing fearful or fantastic here; it is just sound reasoning and practical application. Surprisingly, one of our authors predicts that technology will not isolate us in large urban centers. Within an information society, he visualizes that technology will allow a "de-centralization" and an

ability for citizens to actually move into the smaller community and enjoy its lifestyle.

Several significant concepts, "signposts," in a manner of speaking, used by our authors stand out as particularly insightful while at the same time offer advice for the new millennium—*problems and possibilities, communication, and evaluation.*

**Problems and possibilities**—While we may like neatness and efficiency, life is always ambiguous and does not provide order and neat solutions. Jon Lea Fimbres-Hetzel reminds us that we will ". . . find ourselves banging, clanging and sorting through the junk for the creative solutions that will provide stability and meaning for us in the 21st century."

**Communication**—The essential element in education and instructional technology is *communication*. Although the possibility exists for us to literally lose ourselves in a myriad of technological devices, David Weaver suggests, "We need the technology to fade into invisible infrastructure so we can turn our attention back to the essence of teaching and learning: communication."

**Evaluation**—Considering all of the sources that now disseminate information and the endless possibilities for finding information on the net, Barry Vaughan suggests that we are in a "transition period" in which we have to consider what is valuable and legitimate. The important issues we now face are: "How do we verify truth and accuracy?" and "How do we evaluate information?"

These signposts crystallize important concepts and bits of wisdom to help us formulate a direction for that which awaits us in the 21st century. The common thread that impressed me most throughout our authors' articles is the firm belief in a learner-centered curriculum. Despite the sophisticated technology and innovative pedagogy that's out there, our writers constantly pull us back to the center—the learner.

# Spotlight

## Year 2000: Same, but Different

NAOMI STORY, DIST

Compiling this issue of the *Forum* has surprisingly been a struggle for us. The challenge has nothing to do with organization or technical issues. In fact, having John Nelson as our faculty editor has certainly made the planning and structuring of our news journal easier to complete. Also, Tina Emmons' desktop publishing "eye" and talent have made the work of publication simpler. Alan, John, Tina and I contrive to be the epitome of a *peak performing cross-functional team*. Yet, for the last three months, we have struggled to find people willing to discuss the future.

The theme of "peering into the next millennium" of our educational enterprise is not a simple one. I have been pondering and asking others. "Why has this issue been so difficult to produce?" Some have said that to think of the future is irrelevant because we are going through too many changes *today*. Others have pointed to the Chancellor's leaving as the catalyst for the uncertainty. Still, others say that we are so bombarded with new information these days—with the help of voice, video, and data technologies—that our discourse and contemplation are full of *but* or *on the other hand*. There appears to be so many aspects of developing an argument or rationale for predicting the future that the task becomes overwhelming. Also, lessons from the past and knowledge about future assumptions do not always give any comfort as we determine our new directions. Perhaps this is because we have yet to reckon with the constancy of change or ambiguity in our lives as educators.

My daughter, a college freshman, helped to punctuate this notion of discomfort for me this weekend. While we were preparing Tootsie Pop™ ghosts for the tricksters, we discussed the glories and battles of being a first-year college student, especially as an English major (only a mother who was also one would appreciate). She related the facts on the current debate among linguists and grammarians. It seems they are considering whether the split infinitive is proper English language usage. I was appalled. We both bemoaned the demise of communication with such a change.

Then, my younger daughter roller-bladed in and disrupted our stacks of ghosts. Just as the older daughter yelled at the younger "to not skate in the living room," we both looked at each other and laughed.

It used to be that the Fall *Labyrinth/Forum* was our "welcome back" issue. We can no longer assume that schooling begins in the Fall and ends in May. Learning never ends. And, perhaps the next millennium will be more of the same, only different.



## Education in China -- A Challenge for the Future and a Chance for Support

CARNELLA HARDIN, GCC

During the summers of 1997 and 1998, the Maricopa Community College International Studies Program offered an opportunity for Maricopa faculty to participate in a six-week program at Wuyi University, Jiangmen City, Guangdong Province, Peoples Republic of China. Maricopa faculty, or fellows as we were called, taught classes in their field of expertise and received information taught by Chinese faculty on subjects such as Chinese culture, history, religion, philosophy, education, medicine, law and government. Each Maricopa faculty was partnered with a Chinese faculty to assist with classroom instructions, cultural and language barriers, and becoming acclimated to the new environment.

The attached article is an example of how one country's educational system is being challenged by its people to meet their needs in the next millennium. The article analyzes problems within the Chinese higher educational system and offers suggestions for improvement. Written by a faculty member in the Business and Economic Management Department at Wuyi University, it illustrates a strong concern for improvements in the quality of academic studies offered to students, and questions the teaching methodology required by the Chinese government.

Opening Chinese higher education to the world is among the recommendations. The writer's strategy is to introduce competitiveness into Chinese higher education by encouraging an exchange of foreign teachers into Chinese universities. Such a strategy would expand the student's knowledge and also provide a more liberal teaching methodology within the system.

While at Wuyi University, Maricopa faculty interacted with students and faculty who, unlike their forefathers, are less complacent with the government's control over their lives and are ready for a change in policies. The change will take planning, time, and support from other parts of the world. This unedited article expresses the written concerns and frustration of the Chinese higher educational system as seen by one of the Chinese faculty members. The publication of the article is presented in the spirit of free speech. Its content does not reflect the opinions of the Maricopa Community College fellows.



# Spotlight

## Chinese Higher Education, In My Eyes

YANG XU HIN, WUYI UNIVERSITY, CHINA

*Note: Due to the unique perspective of the author, this article has not been edited for grammar, although it has been condensed. The full text of this article can be found on the Labyrinth/Forum web site.*

### Abstract

This paper analyzed problems currently existing within Chinese higher education system, and presents suggestion on how to resolve them. It also recommends three principles to be included in an ideal higher education system. Those principles are—morality, mentality and basic and specialization competency. The content of this paper will be beneficial to academicians from all the countries.

### Introduction

Let me begin by saying that the content of this paper does not reflect any official comments from my institution or government regarding the development of Chinese higher education system. Although I am not an official in charge of Chinese education, I was a student under this system. Furthermore, I was born in a teacher's family, and studied under this system. Currently, I am employed in the Chinese higher education system as a teacher in a university. Therefore, I feel I have much experience to share regarding the subject. Spontaneously, I have much of my opinions on Chinese higher education and have strong feeling in expressing my opinion. So, at this conference, first of all, I would like to thank you for the opportunity to express my opinions and perhaps to take my hope and someday make it a reality. Detailed information cannot be provided due to the limitation of the length of the article.

### Review Chinese Higher Education

In December 1977, Chinese government recorded the examination for higher education which marked the Chinese education system reformation from the "Great Cultural Revolution" and ended "the recommended systems for entrance of higher education." As a social consequence, all students were so encouraged to follow this policy that they began to understand that the

fortune was no longer left to tender mercy of officials at various levels, but depended on the efforts of one's knowledge, and students began to make much effort in an all-time concentration of learning. We should be aware that was a great achievement in the development of Chinese higher education and it was a positive movement to expedite the science and technology in China. This also is fundamental for the current Chinese higher education.

### Current Chinese Higher Education

Now, Chinese higher education systems, which were established since the reform in 1977, have been carried out, and have been developed for more than 20 years. When we review and meditate up on this system, we can find out some negative phenomenon. Under this system, there were so many compulsory subjects that they forced all students to develop at a same pace. Therefore, it was impossible to groom the student individually, which is inevitable to train higher level talent. At the beginning of 1990s, Chinese higher education gradually introduced the credit system, in which, students can select some subjects upon their own interest.

However, the following questions remain in the current Chinese higher education:

**Problem 1:** The specialization is so detailed that the student can not acquire an adequate background knowledge beyond their specialization field. Take the accounting as an example. In China higher education, most of universities eager for quick success and instant benefit, focuses on the so-called hot specialization and demotes the background and universal knowledge. Therefore, there are specializations of commerce accounting, manufacture accounting, banking accounting, construction accounting, tour

accounting, hotel accounting, and so on. We can not imagine how to teach student in just one specialization for four years. I advocate that students become versatile and erudite, especially in the today's market economical environment, in which, everyone's job is precarious and even more each job need the versatile talents. Without the versatile and erudite, our students can not fund their new job conveniently and do the job well.

**Problem 2:** Distorted concept of result from scientific researching and distorted concept of talent person. In China, most higher education institutions must undertake some scientific researching programs. However, for the scientific researching in Chinese higher education system, it is difficulty to combine scientific researching results with social practice especially in economics and accounting. Under this scientific researching system, the most scientific researching result that can be easily recognized by various officials is only the published paper. A person who has the ability to do something practically can not be regarded as a talented person. While a person who has published papers can be easily regarded as talented, while the published paper is only the symbol of talent capacity. As a result, so many papers are in a bid for publication, some people pay money for publication, but few ideas can be introduce into practice, especially in economics and accounting. In Chinese higher education, so many teachers scramble for engages in a so-called scientific researching project, by which they can acquire more money from the government to be profuse in their living affairs and then present a non-pragmatic paper perfunctorily to the superiors after accomplishing such scientific researching. Under this system, there are many so-called scientific researchers undertaking such so-called scientific research which are divorced from

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reality and are plagiarized blindly. As Chinese saying goes “all scholars are in one family, you plagiarize from me, and I plagiarize from him/her.” In most cases, there are many people who can gain an award in scientific research but few people can solve the practice problem. I believe that the published papers, in most cases, only indicate putting forward the author’s opinions or ideas, which means the beginning of the so-called scientific research, not the result of it.

**Problem 3:** So many subjects were designed from the view of current circumstances rather than considered useful for the future. In Chinese higher education institutions, there are many tedious subjects that required students to learn, and the student are so reluctant to learn that they only cram. Take my experience as an example. When I was in a primary school, I began to cram Chairman Mao’s quotations. When I was in middle school, I was forced to criticize Lin Biao (the second highest leader in China during 1966-1971) and the Confucianism. Even when I was in higher education I still was involved in criticizing of “the Gang of four” (that mean Wang Hongwen, Zhang Chunqiao, Jiang Qing and Yao Wenyuan, all of them were the leader of the party and country in China before 1976) and learned the Marx’s work “On the capital,” which is a compulsory course for higher education students who major in economics and Lenin and Stalin’s works. In 1995, when I studied in abroad, I reviewed what knowledge is learned from the learning by myself, and most of my literate and numerate knowledge were acquired from my family education. I strongly felt that I had learned nothing from the Chinese education system, except gained some diplomas. What tragic! This tragedy is in some extent influencing current education system although it has passed.

Of course, we should be aware that the Chinese higher education has its strong points, such as strict management system of students eligibility, students are more disciplinarian and respect their teachers and the teacher love their students, and so on. However, in order to focus the discussion in this paper, I would not present details of such strong point.

## How to Improve Chinese Higher Education

It would be extensive and important question for China. Since China open up, each Chinese leader, all of them are very solicitude about it. However, in 1989, the late Chinese senior leader Deng Xiaoping was not satisfied with the Chinese Higher Education still, and he said “*the biggest failure is in education during the past 10 years since China open up.*” (Deng Xiaoping on Education, page 207, People’s education publish press) In my opinion, the measurement to improve the Chinese Higher Education (HE) would be following:

### 1. Open Chinese HE

I dare say that the best way to improve the Chinese HE is opening it to the world. Open Chinese HE means introducing the competitiveness into Chinese HE through inviting foreign teachers into Chinese universities and sending Chinese teachers to the Western countries to update their knowledge. Currently, most Chinese universities actually employ some foreign teachers, but most of them are in foreign language, which is not enough to improve Chinese HE. It is necessary to expand the academic field to employ the foreign teachers. Let Chinese teachers have a competition with their foreign counterparts. For this sake, I have employed a foreigner, who retired from UN, as a teacher in our department. He would be the first foreign teacher engaged in Non-foreign language subjects in our university. Furthermore, I will invite more foreign teacher to our department and I hope I can be post-graduate student or a visiting scholar of these universities reciprocally.

### 2. Abolish designated textbook

Designated textbook means that examination is within the textbook even it is so tedious and verbose. Also the designated textbook is a monopoly in education that leads students to read only one book, and that is the direct cause of problem 4.5 and 6\* above. If we abolish the designated textbooks, we can expedite the development of the knowledge and students absorb it without limits. Let students select suitable textbooks and learn from their selection.

### 3. Enrich the teaching style

Without a designated textbook, students can acquire a variety of academic opinions in one subject. Some of them maybe correct and some maybe error. It is the teacher’s duty to help students to identify it. In this case, teachers should let students put forward various ideas about the subjects to discussion and put forward the argument for and the argument against. Through the discussion, students also can increase their learning. Also, I advocate the individual teaching for university students, and a better teaching style should concentrate on how to teach students to do rather than to write.

### 4. Enrich the examine styles and abolish any forms of lottery in various examinations

I advocate that the examine style can not be limited in only one, we should adopt various examine styles according to different characteristics of subjects, and prevent it from any of lottery. I believed that a perfect style of examination can examine the student how much they really have understood rather than how much they have crammed.

### 5. Bestow award forward to the person who can solve a practice problem

In Chinese High Education, it is necessary to renew the definition of the talented person and to renew the definition of the scientific researching result. I persist that the talented person is who can do something prominently rather one who only can say and write prominently. Currently, in China there are many so called “talented persons” who are so mediocre and can not show their prominence both in doing and writing, except their higher status. These so-called talents are only the ornament for the employers. In China, there are so many students who want to be a such ornament through the lottery examination, that is why so many students make tricks in the examinations regardless of discipline. Furthermore, all teachers scramble for being such ornament through publishing paper but few teachers put much attention to the practice. So, in order to reverse this situation, it is necessary to establish an award for the person who can

continued . . .

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actually solve a practice problem, which come from social practice instead from superior official scheme.

## Conclusion

In my opinion, the ideal model of higher education should contain following:

- training student the capacity of morality,
- make the learner have a good mentality,
- and improve student's intelligence.

## Explain as following:

1) **Morality**, that might contain the integrity and responsibility, these characteristics are most important for a person living in modern society.

**Integrity**, in most cases, we are usually dependent on the laws to keep the social order, but in modern society, science and technology is updated rapidly and the laws always are obsolete and not current. Take the computer knowledge as an instance, serious computer criminal activities infiltrate the Internet but there is no law to restrict infiltration entirely and effectively. If this is a case we need the integrity to keep the Internet in order. Although, it is not being trusted entirely. In modern society, we should groom the student with responsibility for what he or she has done. The morality may vary dependent upon the different countries. In China, we persist on promoting the contributory altruism and self-sacrificed spirit and demoting the hedonism and selfish.

2) **Mentalities**, that would contain patience, the ability to coexist and cooperation with others and the ability to be humble.

**Patience**, we can say that modern society is filled with competitiveness. Living in this society, success is not usual, while life is always filled with failure, or dilemma, or adversity. It is easy for everyone can enjoy their success with pleasure, but patience is more important than the pleasure for a person in struggle. As being a teacher, we should let students better understand this term.

**The ability of coexistence and cooperation with others**, it is inevitable and indispensable for the student's career. Students may face various persons with different characteristics in their careers. So students should learn how to coexist and cooperate with such persons.

**The ability of being humble**, that would be a special characteristic for China students. In line with Chinese tradition, the youths are always obedient to the old. It is a saying that goes "pay more respect to the old." So, imperious, arrogant or naughty students can not be accepted by the old who always decide the fortune for the students. Therefore, the ability of being humble, or even fawn would be a matter of success for Chinese students.

Both 1 and 2 is very important of Chinese HE for the sake of the only-children growing.

3) **Intelligence**, I think their would include basic and specialization competency. In the basic competence, we should train students to improve their literate, numerate ability, and the ability in analysis and solution of problems. Moreover, the ability in remember for a long time and understand quickly. In the specialization competency, we should train students to enhance the professional skills and understand the development in the specialization field, and update the knowledge in the field frequently. That would require their teacher to update first rather than teach students with what the teacher has learned when the teacher was a student.

Currently the Chinese government is beginning to accentuate the improvement of higher education. The new elected premier Zhu Rongji proposes to buildup the national economy through Scientific education, and Zhou Yuanqing, the vice minister of education stressed the higher education reform at the National education work meeting which was held in Wuham at the end of march of this year. He said that the reform will be including:

- Improve the higher education reform and setup some comprehensive higher education college
- Adjust the specialization according to the social practice and encourage the university to setup specialization
- Improve the pedagogy

We are looking forward to a better result of the higher education reform, and hope the Chinese higher education becomes increasingly pragmatic.

I present the above information to encourage us to struggle to enhance the quality of higher education together. Higher education is a cosmopolitan strategy for the future of human being, not a tool of a government. Better higher education must bring the prosperity in the future.

Effort may be the same but success would be in different way, because effort is a kind of charge and success is a kind of feeling. ▲

*\*In consideration of space, we have omitted problems 4-6. You may see this document in its entirety on our web page.*

--Editor

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<http://letterbox.wyu.edu.cn/>  
available in Chinese and English





# Spotlight

## Fibber McGee's Closet: Peeking Around the Corner into the Next Millennium

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*Jon Lea Fimbres-Hetzel, former PVCC faculty member, is currently Regional Educational Advising Coordinator of the Middle East and North Africa, and a humble learner.*

In a very inspiring and insightful book, *a simpler way*, by Margaret Wheatley and Myron Kellner-Rogers, we are reminded that: "Life uses messes to get to well-ordered solutions. Life doesn't seem to share our desire for efficiency or neatness. It uses redundancy, fuzziness, dense webs of relationships, and unending trials and errors to find what works. Even change changes."

Reading this brings to mind the image of Fibber McGee's closet and his indomitable optimism. When looking into the next millennium, we will be sorting through exciting trials and errors, messy solutions, problems and possibilities we had never imagined.

Fibber McGee's closet is symbolic of the wonderful, frustrating chaos that we can expect to encounter as we ignore the warnings "to keep the door closed!" We will find ourselves banging, clanging and sorting through the junk for the creative solutions that will provide stability and meaning in the 21st century. Out of the messiness, we have the potential to create a future of closer communities, more educational choices, collaborative relationships with computers, and global connections.

Ironically, I have been able to glimpse the future through a very recent innovation I have been implementing on an international basis. In the past six months, the TOEFL exam has shifted from paper-based to computer-based testing. After piloting the computer-based test in many regions, TOEFL converted all sites to this model. The administration of this test through computers has the potential to bring computer skills to citizens throughout the world. After students get over their initial distrust and feelings of inadequacy about computers, they are reporting satisfaction with its convenience, efficiency, and reliability.

The implementation of this change was complex and messy, yet exciting. Organizations and businesses around the world had to communicate by providing continual feedback. Many people warned "Don't open that door," but, now that most of the junk has been sorted through, students will hopefully begin to benefit from the exposure to the convenience of computers.

Another example of the system working through the messiness of this change is the increasing demand for "virtual universities" and/or other distance learning experiments. Small countries which have a desire to improve the skills of their workforce and create an informed citizenry are looking to international exchanges of faculty and information. Because many of these countries are in very remote regions, they cannot recruit the number of qualified faculty to fill their universities. Electronic campuses allow these students to have access to the most current and creative teaching. Countries once resistant to the Internet and technology are now realizing its potential to meet their needs. It seems that a new distance learning organization is coming on-line daily. Through these trials and errors, only the effective ones will survive.

With each new solution, comes not only promise but the next generation of problems. Ideally the virtual classroom will allow students to have more teacher/student contact. Since electronic classrooms generally function best with 15-20 students, many overseas students will have the choice of the traditional teacher-facilitated classroom or a computer-facilitated course. Students and teachers will be able to choose the method of education that works for them. More teachers will be needed, especially those with content and computer skills. Improved computer, writing, and reading skills will be essential for students to take advantage

of all the new educational venues. Finding efficient delivery systems for these innovations will continue to challenge us as we head into the next millennium.

As an overseas professional, I am continually amazed at the diversity, the accessibility, and the flexibility of working through an electronic network of colleagues and students. Working from my home office in Cairo, Egypt, I regularly plan seminars and workshops with my colleagues in Mexico, Columbia, England, Pakistan, Malaysia, Ghana and Washington, DC. When I ask for assistance via e-mail, I receive feedback within days. The advising network that I help coordinate and train consists of people from every nationality. By trying to keep track of all the innovations in education and translate them into a form that will benefit international students, we expand choices and literally open up the world to citizens of all countries.

Communities will no longer be defined geographically since we will be working, learning, and shopping with people throughout the world.

As a "differently organized" person who enjoys the order that I know is always buried within the messiness, complexity, or confusion of the innovations which challenge us, I am optimistic about the choices and learning that will become available to us as students and teachers in the 21st century.

Opening the door and sorting through the plethora of junk and treasures, offers us more possibilities and connections than we can imagine. Just as Fibber McGee did each week, we must find that developing the patience, perseverance, and even a sense of humor is the key to living with the messiness of experiments and successes of the new millennium. ▲

# Spotlight

## A China Experience: Making Connections With International Colleagues

CARMELLA ARNOLDT, GCC

An Ancient Chinese proverb says that a man is not a great man until he goes to the Great Wall. Metaphorically, this was true for seventeen MCCD faculty who took part in the 1998 Teaching Exchange Program at Wuyi University in Jiangmen City, one & a half hours from Guangdong (Canton), China. Three months have passed since our return; along with many of the other Fellows, I'm sure, this time has allowed me to reflect on a most valuable personal and professional experience.

One of the most striking aspects of spending five weeks in our dorm-like Cultural Exchange Center were the connections developed among the participants. Indeed, we became family, with all of the responsibilities and ties the word implies. If one of us had a difficulty, any number of the others rallied to help. Beyond this, many Fellows developed close ties with our Chinese colleagues and students. Along with knowledge gained from Chinese scholars in history, education, law, politics, and the arts, these classes will influence our teaching in MCCD. After many hours of the traditional lecture methodology, other teaching styles offer great appeal.

Our initiation began after a grueling 15-hour flight and 24 hours of travel; we arrived on a gloomy afternoon in downpouring rain. Half of us did not have our luggage for five days. A two-hour minibus ride to Wuyi offered a first glimpse of the varied countryside: paddies, farms, new and old buildings, and people everywhere. On the bus we were asked to practice a skit or song to present after dinner that night when we would be introduced at the closing ceremonies of the annual Spring Festival. We discovered

two important aspects of teaching -- ingenuity and grace under pressure!

It rained that first night, and, with the exception of one or two days, the rain continued for the next three weeks. We were grateful to have air-conditioned sleeping quarters, but we were challenged in other ways. Coming from a dry climate, the humidity took its toll on all of us. Many relied on dry cleaning for clean clothing; other changed shirts several times a day. At mealtimes, where the plentiful and sometimes exotic food was prepared by the gracious and accommodating staff, we exchanged tales of the morning or afternoon's events. Have you tasted night fragrance, a delicate, leafy green vegetable that looks like a cluster of grapes? We loved it. Nevertheless, after several weeks, familiar foods were missed. Despite these minor hurdles, the experience was one of intense satisfaction. It would be difficult to name each of the many pleasures our hosts and friends provided, but a few must be mentioned.

Our colleagues endeared themselves to us in many ways. For example, one rainy night a teacher of foreign language, (English!) hired a van to transport us to the English Salon held in a local hotel conference room. Here, with a few students and workers who meet weekly to practice English, we had tea. Others invited us to their homes for ritual tea ceremonies or exquisite home-cooked meals. The husband of one of the English instructors prepared one of the best. As he hailed from Sichuan, his wife claimed her spouse's dishes were superior to any she could prepare. In addition, her son entertained us with piano music while we

ate. These experiences were truly special and often emotionally moving.

Likewise, our professional relationships with many students were special. One delightful young woman invited me to be her American "mother," and Gloria will forever hold a special place in my heart. Perhaps the six of us assigned to the Foreign Language Department had some of the best opportunities, since we were able to communicate closely with the faculty and students. Many of them are preparing for careers in business or education. We talked to them, played cards and games with them, read their papers in the evenings, or simply sat with them. They loved us, and we loved them for many reasons. Their thirst for knowledge, kind manners, and genuine appreciation for us as American teachers were gratifying. This experience will greatly enhance our teaching of our own diverse population.

Our departure receptions gave us the opportunity to speak heartfelt farewells. The room overflowed with camaraderie, joy, and a touch of sadness. But we were not simply left with our photos and memories. We won't forget Tristan; he captivated us with unfailing good humor and love for the English language and American culture. He was also an immense help with the dressmaker, acting as both interpreter and courier. One of our dearest friends in the Foreign Language Department, English instructor Becky Guo, is now at Mesa Community College. With others, by post and email, we continue to enjoy the benefits of sharing professional and personal stories with some very special people -- the students, faculty, and staff of Wuyi University. ▲



# Spotlight

## Problem-Based Learning: Redefining Self-Directed Instruction and Learning

DEAN STOVER  
GWCC

Various task forces, professional associations and other groups have recommended educational changes designed to better prepare students to participate fully and productively in today's technology-based workplaces and those of the 21st Century. The key skills listed include critical thinking, problem-solving, teamwork, verbal and written communication, ability to research, and lifelong learning. This recommendation has been articulated in *Goals 2000*, the *SCANS Reports*, *What Work Requires of Schools* (1991) and *Learning a Living: A Blueprint for High Performance* (1992), and by educational leaders at the 1994 Wingspread Conference and The National Research Council in 1996. These organizations also emphasized the need to prepare our students to become successful citizens. A common theme among systemic reform advocates has been that current curriculum and pedagogy often fail to prepare students to use what they have "learned" to solve real problems which they encounter in the workplace or in a democracy.

Intuitively, teachers know this is true. We know that what we teach in one class is not often transferred to other classes. To meet this concern and help students become more independent and interdependent learners, we have adopted cooperative learning techniques and developed learning communities so students are required to make connections among courses. These strategies do move us along a continuum toward self-directed learning, but there is another step which better accomplishes this goal: problem-based learning. (<http://www.imsa.edu/team/cpb1/whatis/whatis/slide7.html>)

So what is PBL? According to Finkle and Torp, "problem-based learning is a

curriculum development and instructional system that simultaneously develops both problem-solving strategies and disciplinary knowledge bases and skills by placing students in the active role of problem-solvers confronted with an ill-structured problem that mirrors real-world problems." (<http://www.imsa.edu/team/cbpl/>)

I first heard about PBL in 1997 when MCCD sponsored a LodeStar presentation by Harold Barrows who was part of a faculty group at McMasters University that first developed PBL to train graduate students at a medical school and Ann Kelson, another internationally recognized PBL leader. (Mr. Barrows is now at Southern Illinois University (<http://lookup.siumed.edu/curriculum/PBLI/Index.htm>). At the same time, a team at GateWay put together a FIPSE (Fund for Improving Post-Secondary Education) proposal to use PBL to integrate general education courses into the Facilities Systems Technology (FST) Program which trains students to manage the heating and cooling systems for buildings.

Research by Stepien, Gallagher, and Workman shows that PBL will increase retention of knowledge, help students transfer concepts to new problems, enhance student interest in the content, and enhance self-directed learning. We believe that our project will be a model not only for technology or vocational programs but also for general education in MCCD and elsewhere as we head into the 21st Century.

Using this approach means that students will not take separate classes to obtain a degree but will solve a series of problems during the two-year program. By solving those problems, students will meet the competencies for all the courses in their program. The problems used in the program will consist of a series of

common, important and ill-structured problems (ill-structured so there will be multiple solutions). These are designed by people from Intel and Johnson Controls (our industry partners in the grant). These problems will be carefully selected so their solutions will encompass the degree competencies. Students will test their solutions in a real-world lab provided by Johnson Controls. After solving a problem as a team, individuals will then be given another problem to solve on their own in order to demonstrate how well they have met the competencies covered in each problem.

Solving real-world problems changes student and faculty roles. Because students are engaged by the relevant problem, they "own" the problem and much of the learning process is turned over to the student. Students meet twice a week with a faculty tutor. At these meetings, students define the problem, identify what they know, and then discover the concepts, principles and skills they need to know to solve the problem. What they need to know becomes the "learning issues" they focus on to solve the problem (<http://www.cvm.msstate.edu/Academics/pbl/index.html#Round1>).

Most of the students' time that was previously spent in a technology class now is spent researching and meeting with their teams to discuss what they've learned and what they still need to know. This cycle of individually researching information and then, in teams, evaluating, questioning, discussing, and hypothesizing what that information means becomes the process they will use to solve all problems. Students become self-directed, independent learners who will work well in teams as they solve current and future problems in all kinds of settings.

continued ...



The roles for faculty also change dramatically, for they become mentors or tutors whose task is to help students discover and foster an effective process for solving problems. Tutor manuals are written to help faculty know which knowledge and skills will be focused on for each particular problem in order to make sure students don't stray too far from the goals of the problem. Through appropriate questioning, faculty tutors help guide students through the process, but they never provide the answers. Other faculty mentors then serve as resources for students and can provide mini-lectures, workshops or other assistance the students need to help them solve the problem.

Of course, this model will need to be adapted to work in the open admissions policy found in the community college setting. However, we believe that as long as we provide support services for students with low-level skills in math, science or English, our students will succeed because they will be motivated by solving real-world problems.

So where will problem-based learning lead us in the 21st Century? It will lead us to a new definition of at least five key issues:

- 1) It redefines student and faculty roles in teaching and learning. Students take full responsibility for learning; faculty take full responsibility for problem design and for tutoring or mentoring students.
- 2) It redefines how students will meet competencies. Students must still be able to demonstrate the competencies for all courses they would normally take separately; however, there will be much less time spent in class. Typically, FST students would be in class four hours a day, five days a week. For PBL teams, they will meet two times for a total of four hours a week; the rest of the time will be used for researching the learning issues and developing necessary skills. Faculty will serve as resources for the students, and provide more one-on-one or small group instruction.
- 3) It redefines student services: we will need to develop new approaches for enrollment management, fee payment, and transcript formatting.
- 4) It redefines the need for buildings: Because the students won't be going to separate classes, the need for building space will be reduced.
- 5) It redefines how faculty will be loaded. Instead of three hours load for each three-hour course, a new loading system will be worked out during the FIPSE grant process.

GateWay is proud to be developing a national model that has the potential to change the way many technology or vocational programs teach their programs. But PBL is not just for technical programs. PBL is a growing movement within education. Just check out the websites when you search "problem-based learning" (a good site to start exploring is <http://www.csuchico.edu/~andersb/webtrain/pbl.html>), and you will discover that elementary, high school, and post-secondary teachers are beginning to integrate this approach into their classrooms.

I'm convinced the future in education involves PBL. The real challenge for educators at the beginning of the 21st Century will be developing a PBL approach for all types of educational degrees so that most students become self-directed learners who can solve real-world problems. As Howard Barrows states, "Teachers realize that PBL puts many things they have added to their traditional teaching (problem solving activities, collaborative learning, critical thinking exercises, independent study) into context and gives them meaning. Problem-based learning is a natural and powerful way for the brain to learn."

*See also MCLI's PBL web-site at: <http://www.mcli.dist.maricopa.edu/pbl/>*

