School is an institution that exists within the complexity of other institutions. School, as an institution, contains its own structure and bureaucracy. Schools usually reflect the beliefs and the values of the society in which the school exists. Thus, a two-way interaction exists between a school and its social environment. Students who attend school bring along their issues, learning ability, and motivation and interest. It is the responsibility of the school to develop new ways to promote success in order to meet the demands of the ever-changing student population. Data from tests (standardized and instructor-made tests), administrative data (such as grades, attendance, and mobility rate), and from graduation rates provide evidence that changes occur with the student population. A classroom reflects the diversity of the society that fostered its student clientele. Therefore, it is the role of the instructors, who are in daily contact with the students, to reach these students and adopt effective approaches to do so.

In short, current society reflects a diverse and heterogeneous society, in other words individual differences do exist. Are you similar to the person next to you? Are you the same as your siblings, parents, or friends? Some perceived differences might be apparent; nevertheless, you are your own unique individual self. This applies to the student population as well. As Skinner noted, all students bring something to classroom and instructors have to work within that framework to help the student learn. Thus, clear objectives (incorporating both low and high-level action verbs) used in lesson plans can help promote a stimulating environment, which can foster student success.

**The Heterogeneous Classroom: Academic Diversity in College**

**Organization of Schools and Society**

The debate between nature and nurture is considered obsolete because a tremendous amount of research in psychology, behavioral genetics, and behavior analysis point to the conclusion that nature is fostered by nurturing. A recent study in the journal *Pediatrics* (Vol. 117 No. 3 March 2006, pp 771-780) *Early intervention in low birth weight premature infants: Results at 18 years of age for infants health and development*
program), calls for further early childhood education and intervention because of the positive longitudinal affects on learning. Why is this important to college-classroom learning? Students who are enrolling in college classes came from either effective or ineffective environments Average college students, and especially adult college students, might require extra reinforcement with study strategies, note taking, or test taking. Thus, the role of the college instructor is to adopt pedagogical methods that help with the education of their students. This implies that the old models of college instruction may be ineffective, such as lecturing for two hours, not caring if students show up, teaching to the mass audience, or not providing positive feedback. In short, instructors must meet the needs of their changing student population.

Student environments differ and as a result, instructors now teach academically diverse students, from “at-risk” students with low motivation, to the high overachiever. This suggests that instructors must be able to help the “at-risk” students who may find a class difficult or boring and usually exhibit poor attendance. On the other hand, instructors might also have to find out how to provide enrichment for the bright students who may find the class challenging and worthwhile. Then there are the average students who may just do what is necessary to pass and move on to the next class. The main point: all of these types of students are most likely to be found in a college class. What to do? I will suggest some methods that can help teach a heterogeneous class.

Main Strategy

The main strategy for helping a heterogeneous classroom is to determine the current level of the students. A pre-test (which already is in use at Keiser College) usually provides diagnostic information that could identify basic areas for improvement. Daily lesson plan objectives should reflect these areas of improvement.

In addition, instructors should identify those students who are exhibiting difficulty in the class based on a teacher-made test that is administered in conjunction with the pre-test. This should occur early on in the course, so ample time is available to help these students improve. However, if these students go unnoticed, a correlation usually exists between “at-risk” students and attendance. It states that there is a strong positive relationship between students who are having difficulty and their poor attendance record. In other words, if these students experience high rates of difficulty, then these students usually have a high rate of absenteeism.

Learned Helplessness: A Way Out

At-risk students try to avoid painful experiences; for example, Mary does not understand the work and when she asks a question, the instructor explains it to her in the same way as he just taught the class. Mary is still lost. She experiences anxiety and frustration during the class. This means that no matter what she does (asking the instructor for extra help and still not being able to understand) the painful experience (not understanding, feeling anxiety or frustration) is still present. In other words, Mary now views the class as a source of stress and
anxiety. She may want to avoid the painful feelings associated with stress and anxiety by not attending class. Therefore, she has learned to avoid class because she has been unsuccessful there. In short, all she learned to do is to give up and not bother to try. Psychologists call this condition learned helplessness.

Thus, to help increase student understanding before they learn to be helpless, instructors should ask questions directly to students during class. This is a better way to check for understanding. An ineffective approach is to ask, Are there any questions? Instructors should call upon students at random times during the class to repeat the material, concepts, or vocabulary words back. The main point to remember for teaching “at-risk” students is to provide early success and small rewards. For example, Mary would have been more likely to be successful at learning the material if the instructor were to explain the material through several approaches. She would not have experienced an increased stress level when she asked a question, and she would have been more likely to attend classes regularly.

In addition, constant repetition of the material is good for clarification, which allows the instructor to gauge the class for its level of understanding. In addition, most students respond well to early success and small rewards as noted above. Therefore, an instructor should give frequent but small in-class assignments. These assignments could be follow-up questions from the lecture. Most important, these assignments could provide students with an opportunity to apply the material in a problem-solving activity. Students can also check their classmates’ work by trading papers. These opportunities could also be a way to enhance active reading/learning in class.

Building a Knowledge Base

Students could write a short review paper that asks them to identify the main ideas mentioned in class to help with their understanding of the lesson. Instructors could simply ask students to list the main ideas, concepts, or vocabulary terms. This approach incorporates the use of the KWL (referenced in November’s newsletter) in which the instructor asks the students to identify five ideas that they learned at the end of the lesson. These answers could provide a starting place for the next day’s lesson, thus building upon prior knowledge. Remember, connecting new knowledge with prior knowledge helps improve retention of the new material. Another approach is to give a small review sheet that asks students to list the main idea related to the subtopics in the textbook or the review sheet could contain problems that allow students to apply the main idea. The point to remember here is to have students summarize the main ideas at the end of the class. This approach is more effective than asking students if they understand.

Moreover, do students write down their class notes from the board? Do students find the notes meaningful? If they do take notes, do instructors check them? Should an instructor allow students to use their notes to answer complex questions on a test? Remember complex question are not identical with difficult questions; for example, complex questions ask student to apply, analyze, synthesize, and evaluate information.
A suggestion calls for instructors to check student notes randomly. The instructor could use this as a grade and could provide evidence that students are retaining the presented information. In addition, I found that students who were able to use their notes on a complex test were more appreciative. My students usually paid closer attention to their notes and assignments. This method allows an instructor to distinguish between those students who know the material and those who just regurgitate the content of their notes on the test, suggesting the student may not really know the material. Therefore, the instructor can engage the particular student in remedial work if necessary.

Most important, if the students are not doing well, then an instructor might have to present the material in several other ways. Such methods include more applications, a slower pace, added relevance, peer explanation, or an entire different approach. This technique of using more than one approach is known as an “instructor’s bag-of-tricks.” The main point to remember is: do what is necessary so that the students are able to grasp the material. Note also that the long lecture model might not be the most effective method.

Verbal and Non-Verbal Behaviors

Furthermore, an instructor should identify the main talkers of the class and elicit other students to talk. An instructor can ask, does anyone else know the answer? On the other hand, an instructor can call on the students directly, for example, Joe, what do you think about X? These strategies align with the concept of “with-it-ness.”

An instructor must also be in tune with the non-verbal behavior of the students. If an instructor gets the blank stare or puzzled look, then that instructor might have to ask by a show of hands how many got this topic, or ask, Joe, could you explain it to the class? If that instructor receives negative responses to both approaches, then he/she might have to stop and state, “I will explain this material in another way.” Several approaches may have to be employed to reach the class. An instructor might be able to solicit the help from those students who do grasp it and begin a collaborative activity in which the students receive an opportunity to apply the information and the advanced students can offer peer tutoring.

Reading

Another approach to use for students who are demonstrating learning difficulties is to prepare more secondary material. This could include showing students how to conduct an SQ3R (referenced in November’s newsletter) with their text-based reading or vocabulary exercises. Reading becomes purposeful and helps to make the reading relevant to the students. Other material, such as A/V or handouts could help students build prior knowledge, because if students are reading a text cold, they might not have the prior background, thereby making the reading irrelevant and difficult. Therefore, providing reading strategies along with secondary material could help “at-risk” students learn from the readings because they now know how to read the text. In addition, an instructor could hold small group meetings with students who are having difficulties, based on early test
grades, assignment grades or from those who expressed a problem. These meetings could occur during office hours.

**Modeling Procedures**

Another point to remember is that an effective approach to help teach academically diverse students is to permit students to model the tasks that will be implemented in the class. Modeling, instead of just relying on telling students what to do, allow students to demonstrate a task (not limited to reading, writing, or test taking). These students are more likely to show that they understand the task through doing than saying. Instructors, who also repeat the modeling of the tasks often, provide the necessary reinforcement of the correct behaviors. Instructors should not assume that students know how perform these tasks. This is especially relevant for the older adult students, who may have been out of school for many years, or the younger students who have had a difficult time with prior school experiences. In short, modeling asks students to demonstrate their understanding of the material by performing the behaviors involved in the required tasks of the class.

A possible way to implement this approach is to dedicate a few hours on the first or second day as a workshop on note-taking, test-taking, studying, text-based reading, and research-paper writing. The skills learned during these small workshops can be reinforced by referring back to the skills throughout the course. When students perform the task and teach it to themselves, instructors can observe that their students know what is expected. Students either perform the task or do not perform the task. If the instructor observes the students perform the task incorrectly, then the instructor can call upon knowledgeable students to show the correct way to do the task. This system implies a mastery approach to learning the tasks, which gives all the students a chance to help each other. This approach also leads to peer collaboration.

**Collaboration and Feedback**

Students sometimes learn better by doing and from each other. The above technique could be used through a collaborative approach in which students teach by comparing and contrasting different techniques that worked or that did not work for them. The students become engaged in their own learning, and as a result, they are more likely to buy into the lesson. They are more likely to succeed because the material becomes less abstract. Peer tutoring and collaboration are very helpful for the diverse classrooms, especially for both the low-performing and high-performing students. Why? Students can be paired together based on ability, so the high-performing students can teach the material to their low-performing classmates. The lower-performing students may find the material less threatening or easier to grasp from their peers.

Moreover, from the diversity of students comes the necessary feedback on student assignments. Simple feedback, such as stating, “See me, I can offer some helpful suggestions for you to do better in class.” This could show the students that an instructor cares about them and
their academic success, and that the instructor is not there to punish for doing poorly. Positive critical comments should replace the infamous D- or F+.

**Enrichment**

In any heterogeneous classroom, there will be students who have mastered the material before they come to class. Several methods could help motivate these advanced students. First, an instructor could give supplementary material for the students to study. This material should not be used as busy work. However, if the student is truly interested in the material, these items could become enriching activities. Examples include the following: solving problems, reading other material, critical-thinking about real-world research, or identifying the Who’s Who of the field. These methods, along with peer tutoring or becoming a class assistant (if the temperament is right which should be based on the instructor’s observation of the particular student), can help meet the needs of the advanced student. Yet another approach is to have these interested students meet once a week during the instructor’s office time to host an in-depth discussion of the topic and related issues.

**Conclusion**

In sum, the role of the environment in determining learning ability success has been demonstrated based through empirical research to have a tremendous effect on the outcomes of learning. The earlier the better is the current thinking. Students from different environments are enrolling in colleges. College classrooms represent a diverse background of learners, some of whom get the material on the first explanation, while others may need different explanation styles. A school exists within the context of its social environment and instructors must change their approaches to instruction in order to meet the demands of their student population. If this occurs, then the school produces students who are more likely to learn to apply their knowledge to real-life complex situations. Diversity in the classroom represents a much larger and interesting topic, and to cover all its intriguing aspects in the confines of this newsletter is impossible. Nonetheless, I felt this issue to be important in order to dedicate a few pages to discussion and suggestions.

**Reference**

Accurately assessing your students' developmental state can direct your planning and impel your teaching. For instance, recognizing a 16-year-old's concern about his appearance and his standing among his peers may promote your rapport with him and eliminate learning barriers.

Keep in mind that chronologic age and developmental stage are not always related. Throughout life, people move sequentially through developmental stages, but most people also fluctuate somewhat among stages, often in response to outside stressors. These stressors can cause a person to regress temporarily to an earlier stage. Sometimes a person may not achieve the task expected of his chronologic age. So you will need to address your students at their current developmental stages, not at the stages at which you would expect them to be because of their chronological ages.

In some situations, hopefully most, you will have time to sit down and develop a formal teaching plan. In others, you will be confronted with a "teachable moment" when the student is ready to learn and is asking pointed questions. Invariably, these moments seem to come at the most inopportune times. At times like these, you face the dilemma: to teach or not to teach. Having a knowledge of basic learning principles will help you take best advantage of these moments. Here are some principles proven to enhance teaching and learning.

Seize the moment
Teaching is most effective when it occurs in quick response to a need the learner feels. So even though you are elbow deep in something else, you should make every effort to teach the student when he or she asks. The student is ready to learn. Satisfy that immediate need for information now, and augment your teaching with more information later.

Involve the student in planning
Just presenting information to the student does not ensure learning. For learning to occur, you will need to get the student involved in identifying his learning needs and outcomes. Help him to develop attainable objectives. As the teaching process continues, you can further engage him or her by selecting teaching strategies and materials that require the student's direct involvement, such as role playing and return demonstration. Regardless of the teaching strategy you choose, giving the student the chance to test his or her ideas, to take risks, and to be creative will promote learning.

Begin with what the student knows
You will find that learning moves faster when it builds on what the student already knows. Teaching that begins by comparing the old, known information or process and the new, unknown one allows the student to grasp new information more quickly.

Move from simple to complex
The student will find learning more rewarding if he has the opportunity to master simple concepts first and then apply these concepts to more complex
ones. Remember, however, that what one student finds simple, another may find complex. A careful assessment takes these differences into account and helps you plan the teaching starting point.

Accommodate the student's preferred learning style
How quickly and well a student learns depends not only on his or her intelligence and prior education, but also on the student's learning style preference. Visual learners gain knowledge best by seeing or reading what you are trying to teach; auditory learners, by listening; and tactile or psychomotor learners, by doing.

You can improve your chances for teaching success if you assess your patient’s preferred learning style, then plan teaching activities and use teaching tools appropriate to that style. To assess a student’s learning style, observe the student, administer a learning style inventory, or simply ask the student how he or she learns best.

You can also experiment with different teaching tools, such as printed material, illustrations, videotapes, and actual equipment, to assess learning style. Never assume, though, that your student can read well – or even read at all.

Sort goals by learning domain
You can combine your knowledge of the student's preferred learning style with your knowledge of learning domains. Categorizing what the students need to learn into proper domains helps identify and evaluate the behaviors you expect them to show.

Learning behaviors fall in three domains: cognitive, psychomotor, and affective. The cognitive domain deals with intellectual abilities. The psychomotor domain includes physical or motor skills. The affective domain involves expression of feeling about attitudes, interests, and values. Most learning involves all three domains.

Make material meaningful
Another way to facilitate learning is to relate material to the student's lifestyle -- and to recognize incompatibilities. The more meaningful material is to a student, the quicker and easier it will be learned.

Allow immediate application of knowledge
Giving the student the opportunity to apply his or her new knowledge and skills reinforces learning and builds confidence. This immediate application translates learning to the "real world" and provides an opportunity for problem solving, feedback, and emotional support.

Plan for periodic rests
While you may want the students to push ahead until they have learned everything on the teaching plan, remember that periodic plateaus occur normally in learning. When your instructions are especially complex or lengthy, your students may feel overwhelmed and appear unreceptive to your teaching. Be sure to recognize these signs of mental fatigue and let the students relax. (You too can use these periods - to review your
Tell your students how they are progressing
Learning is made easier when the students are aware of their progress. Positive feedback can motivate them to greater effort because it makes their goal seem attainable. Also, ask your students how they feel they are doing. They probably want to take part in assessing their own progress toward learning goals, and their input can guide your feedback. You will find their reactions are usually based on what "feels right."

Reward desired learning with praise
Praising desired learning outcomes or behavior improves the chances that the students will retain the material or repeat the behavior. Praising your students’ successes associates the desired learning goal with a sense of growing and accepted competence. Reassuring them that they have learned the desired material or technique can help them retain and refine it.

The model below offers a way of conceptualizing the learning process in a way that may assist teachers in identifying meaningful forms of active learning.

**A Model of Active Learning**

![Diagram of A Model of Active Learning]

### Explanation of the Components

This model suggests that all learning activities involve some kind of experience or some kind of dialogue. The two main kinds of dialogue are "Dialogue with Self" and "Dialogue with Others." The two main kinds of experience are "Observing" and "Doing."

**Dialogue with Self:**
This is what happens when a learner thinks reflectively about a topic, i.e., they ask themselves what they think or should think, what they feel about the topic, etc. This is "thinking about my own thinking," but it addresses a...
broader array of questions than just cognitive concerns. A teacher can ask students, on a small scale, to keep a journal for a course, or, on a larger scale, to develop a learning portfolio. In either case, students could write about what they are learning, how they are learning, what role this knowledge or learning plays in their own life, how this makes them feel, etc.

**Dialogue with Others:**
This can and does come in many forms. In traditional teaching, when students read a textbook or listen to a lecture, they are "listening to" another person (teacher, book author). This can perhaps be viewed as "partial dialogue" but it is limited because there is no back-and-forth exchange. A much more dynamic and active form of dialogue occurs when a teacher creates an intense small group discussion on a topic. Sometimes teachers can also find creative ways to involve students in dialogue situations with people other than students (e.g., practitioners, experts), either in class or outside of class. Whoever the dialogue is with, it might be done live, in writing, or by email.

**Observing:**
This occurs whenever a learner watches or listens to someone else "Doing" something that is related to what they are learning about. This might be such things as observing one's teacher do something (e.g., "This is how I critique a novel.")}, listening to other professionals perform (e.g., musicians), or observing the phenomena being studied (natural, social, or cultural). The act of observing may be "direct" or "vicarious." A direct observation means the learner is observing the real action, directly; a vicarious observation is observing a simulation of the real action. For example, a direct observation of poverty might be for the learner to actually go to where low income people are living and working, and spend some time observing life there. A vicarious or indirect observation of the same topic might be to watch a movie involving poor people or to read stories written by or about them.

**Doing:**
This refers to any learning activity where the learner actually does something: design a reservoir dam (engineering), conduct a high school band (music education), design and/or conduct an experiment (natural and social sciences), critique an argument or piece of writing (the humanities), investigate local historical resources (history), make an oral presentation (communication), etc.

Again, "Doing" may be direct or vicarious. Case studies, role-playing and simulation activities offer ways of vicariously engaging students in the "Doing" process. To take one example mentioned above, if one is trying to learn how to conduct a high school band, direct "Doing"
would be to actually go to a high school and direct the students there. A vicarious "Doing" for the same purpose would be to simulate this by having the student conduct a band composed of fellow college students who were acting like (i.e., role playing) high school students. Or, in business courses, doing case studies is, in essence, a simulation of the decision making process that many courses are aimed at teaching.

**Implementing This Model of Active Learning**

So, what can a teacher do who wants to use this model to incorporate more active learning into his/her teaching? I would recommend the following three suggestions, each of which involves a more advanced use of active learning.

1. **Expand the Kinds of Learning Experiences You Create.**

   The most traditional teaching consists of little more than having students read a text and listen to a lecture, a very limited and limiting form of Dialogue with Others. Consider using more dynamic forms of Dialogue with Others and the other three modes of learning. For example:
   - Create small groups of students and have them make a decision or answer a focused question periodically,
   - Find ways for students to engage in authentic dialogue with people other than fellow classmates who know something about the subject (on the web, by email, or live),
   - Have students keep a journal or build a "learning portfolio" about their own thoughts, learning, feelings, etc.,
   - Find ways of helping students observe (directly or vicariously) the subject or action they are trying to learn, and/or
   - Find ways to allow students to actually do (directly, or vicariously with case studies, simulation or role play) that which they need to learn to do.

2. **Take Advantage of the "Power of Interaction."**

   Each of the four modes of learning has its own value, and just using more of them should add variety and thereby be more interesting for the learner. However, when properly connected, the various learning activities can have an impact that is more than additive or cumulative; they can be *interactive* and thereby multiply the educational impact.

   For example, if students write their own thoughts on a topic (Dialogue with Self) before they engage in small group discussion (Dialogue with Others), the
group discussion should be richer and more engaging. If they can do both of these and then observe the phenomena or action (Observation), the observation should be richer and again more engaging. Then, if this is followed by having the students engage in the action itself (Doing), they will have a better sense of what they need to do and what they need to learn during doing. Finally if, after Doing, the learners process this experience by writing about it (Dialogue with Self) and/or discussing it with others (Dialogue with Others), this will add further insight. Such a sequence of learning activities will give the teacher and learners the advantage of the Power of Interaction.

Alternatively, advocates of Problem-Based Learning would suggest that a teacher start with "Doing" by posing a real problem for students to work on, and then having students consult with each other (Dialogue with Others) on how best to proceed in order to find a solution to the problem. The learners will likely use a variety of learning options, including Dialogue with Self and Observing.

3. **Create a Dialectic Between Experience and Dialogue.**

One refinement of the Interaction Principle described above is simply to create a dialectic between the two principle components of this Model of Active Learning: Experience and Dialogue. New experiences (whether of Doing or Observing) have the potential to give learners a new perspective on what is true (beliefs) and/or what is good (values) in the world. Dialogue (whether with Self or with Others) has the potential to help learners construct the many possible meanings of experience and the insights that come from them. A teacher who can creatively set up a dialectic of learning activities in which students move back and forth between having rich new experiences and engaging in deep, meaningful dialogue, can maximize the likelihood that the learners will experience significant and meaningful learning.