

Beneficial Tools for Learning in College Leveled Classes

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Abstract

Failure rates are higher in some classes within the college environment than others. Different learning techniques, within and across colleges, have different impact on the student's performance as it is measured by their test scores. The paper presents various learning techniques such as non-active learning in classrooms (traditional), active learning in classrooms, and individual learning outside of the classrooms. Each of these technique has it's own merit and their applicability depends on the type of course and course content, class room size, availability of new technology in the class room environment, knowledge and availability of new technology to both students and teachers. allocated class room time, teachers and students attitudes, and students behaviors, students and teachers characters, etc. Teaching and learning is a continuous process. Today's technological advancement places greater challenges on teachers to create a new learning environment that should motivate their student's learning.

Learning in College Leveled Classes

Introduction

With the greater pace of technological discovery, extensive utilization of computer along with Internet accessibility, and all these new demands, make the job of today's teachers very challenging. People are more curious about today's education than ever before. Education is one of the key factors that place people for what they are today. Without teachers these days, there would not be any growing knowledge and technology. Teachers are the ones that give that momentum to obtain information across to students in order to accumulate this knowledge and learn. Without this propulsion, it is hard to motivate students to achieve the information they should be receiving. How can students receive this lore? In today's society, students are affected by many sources. It is up to the lecturer or professor to influence students to acquire the knowledge they need to be learning. The paper presents various learning process such as non-active learning, active learning, and individual learning.

It is teachers daily challenge to utilize the class room time effectively and make students think critically. Teachers are mentors and they provide directions to students to develop skills and confidence to gain knowledge on their own. Good teaching liberates students from their teachers.

The Learning Process

Learning process starts at a very early age. From early age students acquire an ample amount of knowledge from different sources. Even though teachers are one of the most

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important sources that influence students, family and friends are ranked number one. As seen in Figure 1, a student can be influenced by many factors such as the community he or she lives in, the television, family, friends, religion, state policies, international conditions, and many more. The environment and surroundings also play a very important role in a student's learning. However, the most important impact in college learning is related to classroom activities (McIlrath and Huitt 1995).

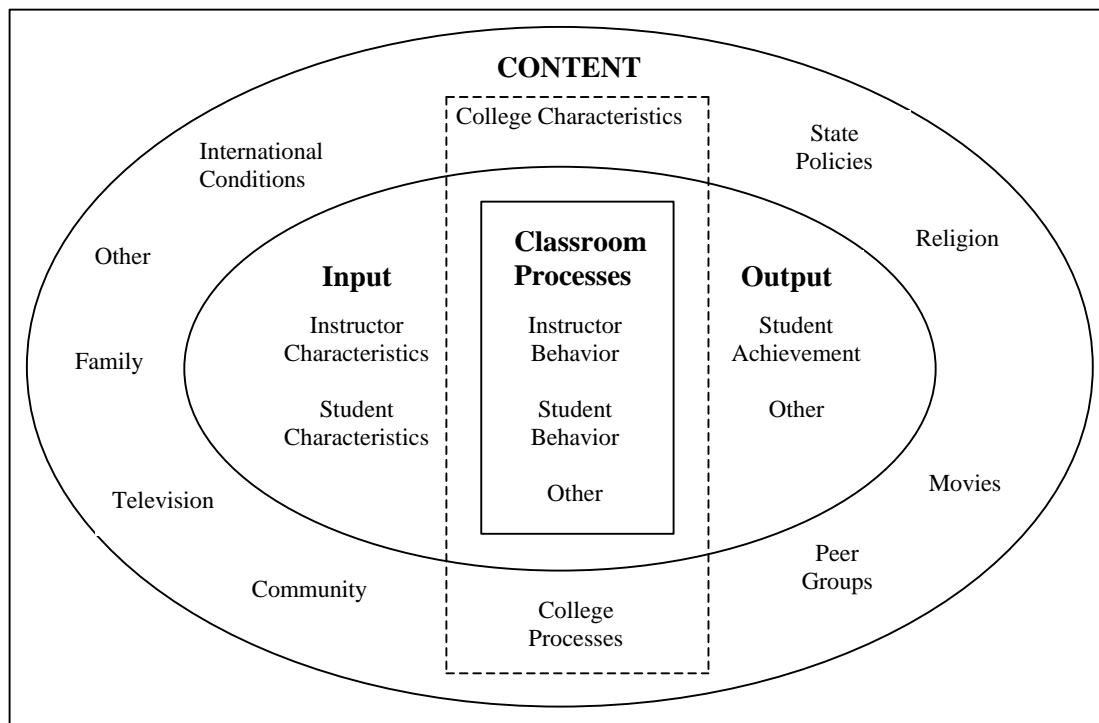


FIGURE 1: The Teaching/Learning Process

For years, teachers are trying to implement teaching techniques to get students motivated in the learning process to better understand the material discussed in class. There are thousands of unproductive hours students consume in classrooms not learning the amount they should. That is why the failure rates in sciences and mathematics are high (Goldsheider 1999).

The class room learning environment impacted by both student's and teacher's behaviors. It can be noticed from Figure 1, that the teacher's characteristics plays an important role in sending across information to students but at the same time it depends on the student's characteristics if he or she wants to retrieve this information. This stage is called the input stage. It is at this stage, where teachers need to be very alert and try to evaluate student's skill by involving students directly in the process of teaching and learning. One technique is to divide students into team of two or three, depends on the class size, and content of the subject, etc. Once, the class is organized into team, then the teacher assign book chapters to each team with a team selected as a class manager to keep an eye on course progress and students involvement in the course. The teacher is the key player in all this process. He can

dedicate an Internet Web site for all the team members to upload their assigned chapter presentations, problems and solutions on the designated site. The designated site is accessible to all team members. And they can download the work of each team members for their file that need to be organized like a text. The next class is the computer presentation (Power Point) by each team member assigned tasks. Depends on the availability of class room technology, Students can also use video tape and Elmo (overhead type projector). In the presentation part teacher and students ask question on the assignment and class interaction take place among all parties involved in the class room environment. The teacher motivates students to participate in the process by asking questions. In this process every one participate and they are all class managers. The class environment is very casual and every one feel like members in a family of learning. This is an input model. The out put is the teacher's evaluation of each team quality of assigned presentations, interaction with class, etc. The teacher will inform the team member of their strength and weaknesses. Team members develop spirit of cooperation and make great strive as they watch other team members presentations. The class manager works very closely with the teacher and provide input on students, their interaction with other tam members and they will check the Web site to make sure that all assignments are in and they are available to every team members. By examining the out put daily, the teacher can easily notice, if the input process is working. The output is when the teacher sees achievement and involvement from the classroom. At the end of semester, as part of their final assignment, each team will prepare the entire course presentation stored in a zip drive or a floppy to be submitted to teacher. The input and output both progresses to better classroom learning process.

Teaching Techniques

In teaching, one has to be determined and able to make the information given in class understandable to all students. Teaching is not always as easy as it seems. It requires a lot of creativity and new ideas to keep the lectures interesting. The students should also feel included in the lectures. A lot of monotonous and boring lectures will not stimulate the student's enthusiasm to learn. The professor, in a way, has to be considered as an actor. The professor should perform lectures as interesting as possible and show enthusiasm in the subject no matter what kind of day the professor has had. This enthusiasm always brings out students' motivation to learn.

There are three types of learning processes:

- 1) Non-Active Learning in classrooms (Traditional),
- 2) Active Learning in classrooms, and
- 3) Individual Learning outside of classrooms (Paulson and Faust 2000).

The traditional types of learning in classrooms consist of normal lectures taught by the professor or by visual lectures. Videos and film projectors will be known as visual lectures. They are very similar to normal lectures because students sit in and listen just like regular lectures. Active learning is anything that students do in a classroom other than listening to the professor lecture or watching a film or video. This may include listening practices, writing exercises, cooperative learning, critical thinking motivators, immediate feedback learning, and the Socratic method of learning (Paulson and Faust 2000). The last technique of learning is the individual studies, or learning achieved outside of class. This consists of one's own experience, seminars or conferences, field trips, and research. All these methods can be used alone, but for better results they may be used together. Table 1 shows an over view of these learning techniques (Paulson and Faust 2000).

TABLE 1: Overview of Different Teaching Techniques

Non-Active Learning (Traditional Lecture)	chalk board/white board, overhead slides, computer
Active Learning	writing exercises, critical thinking motivator, immediate feedback, listening practices, cooperative learning, hands on experience, Socratic Method
Individual Learning (outside of classrooms)	experience, seminars or conferences, field trips, research

Non-Active Learning

Non-active learning, known as the traditional teaching method, has been around for many years. This means "Students are passive participants in a process whereby the professor lectures and everyone else listens" (Goldsheider 1999). In the past, it was more likely for a student to become spellbound from a fascinating lecture. Today, it is more difficult for this situation to happen because students today are saturated by the television. "Their attention span is governed by the fact that the average length of a shot on network television is only 3.5 seconds" (Postman 1986). As technology increases through the years, so does the student's process of learning. Non-active learning alone is not likely to satisfy the future student's quest for learning. Students now can obtain information easily anywhere and anytime. In the near future, students will be more interested in the knowledge they will be receiving than in the degree itself (Smerdon 1999). This is why professors will have to adapt to students' desires regarding learning in order to get the information they want to get across.

It is also more beneficial to improve the knowledge retained in students so when they go out in the real world, they would not have any problems in adjusting. The job market has become a continuous problem for students graduating from college because the majority are not well experienced or trained. Basic non-active learning is not going to cut this. Students these days need more. They need classes to be more relevant, attractive, and connected with the real world. Non-active learning can be these things, but not used alone. Some non-active learning methods are the following: using the chalk board/white board, using the overhead projector, videos and films, and using the computer. All of these methods affect students in different ways. Some of these techniques used in non-active teaching are more effective and efficient than others.

Producing information from writing and lecturing has been the oldest form of teaching. That may have worked in the past but times have changed drastically through the years. Students look more to the future with technology than the past. Therefore, new techniques of teaching should arise. Sure students can sit in a classroom and listen to the instructor lecture for hours on the board but truthfully, the student is not retaining the whole picture. The professor needs to upgrade his or her teaching methods with technology (Smerdon 1999).

Using the overhead projector can reach the same information to students, as does the black or white board. The only difference is that pictures, articles, examples, and etc. can be shown. This gives a better description visually what the professor is lecturing about. It can be used best for examples. Videos and films are also very good to use in classroom teaching for explaining and illustrating examples and real world cases. Students retain more

information from this because we are in a generation where people have been grown up with television (Postman 1986).

Another step up to non-active learning is using computers to lecture. Computers have come a long way since they were created. Before computers, books and teachers were the center of attention for information. Today computers have out passed all these and have gone beyond what a person has experienced. With today's technology, no one has to leave his or her house to go anywhere, do anything, get anything, or learn anything. It has gotten to a point where even lectures are shown on computers through the Internet. Information is on the tip of your fingers. This may have some advantages for students that cannot attend the class due to distance or personal disabilities. This can also have some disadvantages due to the fact if one wants to pose a question, does not have access to a computer or Internet, or needs extra help in the course material. Having extra office hours and help through the phone can overcome these obstacles.

PowerPoint is a tool that can bring all the types of non-active learning together in one program. This is a high-powered software program that is used for presenting information in a dynamic slide show format. This has come to the next best method used in traditional lectures. This program not only can get the information across to students but also has extra effects to keep the students interested. This program makes it easier to organize, illustrate, and deliver ideas professionally. The use of charts, graphics, sound effects, videos, and more can make a dull classroom come alive. It is also important that the instructor is aware and knows the use of upcoming technologies. The knowledge that the instructor carries is reflected on to the students. That is why the more technology and ideas used in a classroom, the better the student will learn. It is an observed fact that when a professor uses PowerPoint in a lecture, the students pay closer attention to the course material. This has been observed in classrooms and through experience. This also helps students retain the material better and become better organized in work. This also shows how organized the professor is.

Active Learning

Active learning is anything students do in a classroom other than listening to the instructor lecture (Paulson and Faust 2000). Several studies in the past and from self-experience have shown that students prefer the active learning process to the traditional method. "This includes everything from listening practices which help the students to absorb what they hear, to short writing exercises in which students react to lecture material, to complex group exercises in which students apply course material to "real life" situations and/or to new problems (Paulson and Faust 2000). This type of technique includes the following: writing exercises, critical thinking motivators, feedback, listening practices, cooperative learning, hands on experience, and the Socratic Method. These work best when they are combined with the non-active learning method. However, there can be some obstacles in active learning that includes limited class time, a need to increase preparation time, the potential difficulty of using active learning in large classes, the lack of materials, equipment, or resources, and the risk that students will not participate (Bonwell and Eison 1991). Each new step an instructor takes in teaching becomes a risk because no one knows the outcome until the end. However, all this can be successfully overcome through careful, organized, and thoughtful planning.

Writing exercises in class such as the one-minute feedback paper, daily journals, quizzes, response papers, homework, and tests all check the student's progress both in understanding the material and reacting to the material (Paulson and Faust 1999). This

gives a chance for students to show what they have learned in class or if they are on the right track. In addition, this also provides an idea of where each student is weak and what the instructor should emphasize more in order to get the material across.

It is helpful to get students involved in discussions or thinking skills about the course material before or after any theory is presented. This will help students generate data, questions, or opinions. This is a type of critical thinking technique used in teaching to motivate students into bringing up their own ideas and becoming more creative. It is a method mostly used by paradox or puzzle involving concepts. This allows students to critically assess theories when they are presented later and increase their ability to solve problems on their own.

Immediate Feedback is similar to the writing exercises but in this case the instructor gets a quicker respond. In this way, the instructor can adjust, speed up or slow down the information given in class during the lecture. This is accomplished by using finger or hand signals. The finger procedure is done by asking students questions and instructed to signal their answers by holding up the appropriate number of fingers in front of them (to eliminate other students copying). The hand signal procedure is almost similar to the finger signal procedure but in this case the instructor asks a question (true or false, yes or no, right or wrong, and etc.), almost similar to a vote, and gets the respond by the number of hands raised. This method is very beneficial in large class sizes because it allows instructors to assess student knowledge at a glance (Paulson and Faust 2000).

Classtalk is a fairly new immediate feedback technique that is used in more than 30 colleges around the United States, including Harvard University (Goldscheider 1999). This technique consists of a hand-held calculator that each student uses to submit responses to questions asked by the instructor electronically. Each calculator is plugged into a jack behind the seat and any electronic action by a student is automatically tabulated and stored in a computer at the front of the room. These collected responses are then projected onto a screen in the form of a bar graph. This gives instant feedback about how well the class is following the material and gives a chance for shy or non-active students to get involved. The only drawback on this technique is the cost. Each graphing calculator used to plug into the system runs about \$100. This can get pretty costly for an oversize classroom or many classrooms. For example, the cost for a 300-seat auditorium is about \$22,850 (Goldscheider 1999). This includes the calculators itself, installation, and long-distance support. Another disadvantage is the more money needed to create incentives for professors to take time to learn how to use this technology and rethink new ways to present the material (Goldscheider 1999). Students seem to like this new technique because it helps them stay awake in class and understand the course material better. All these above methods involve listening and respond practices.

Cooperative learning has become a very effective learning process for students because they have the chance to communicate with the professor as well as their peers, state their own views on the subject matter, share ideas with classmates, and experience working with others. This technique includes working in groups or pairing up in teams for projects or discussions, evaluating one another's work, and comparing or sharing information with others. Another cooperative learning technique is the hands on experience method. This method consists of laboratory work, experimental work, or any other work that allows students to apply the material they learned into an everyday use (Paulson and Faust 2000).

One effective teaching and learning technique that has been around for ages and is still in use today is called the Socratic method. This method involves the instructor testing students' knowledge of lectures, assignments, or course material by asking questions to students and expecting the right answer in return (Paulson and Faust 2000).

This is a beneficial technique because the students do not know whom the instructor will pick to answer the question he or she asks. In this scenario, the class stays awake and pays close attention to the lecture given in class. The instructor can also pose a question and wait for someone to answer it but just randomly picking a student is more effective. It keeps the class on their toes. Another useful method to promote listening is after one student has volunteered to answer the question given by the instructor, the instructor asks another student to summarize the first student's response. These methods are mostly used to pinpoint important information during lectures and to also make sure that the class is following and understanding the course material.

Individual Learning

Individual Learning is learning done outside of the classroom. Experience is often said to be the best teacher. It plays a big role in learning because everyday a person goes through many experiences. This may not be an activity done in classrooms but an individual activity that a teacher may assign to do, for further learning. It is also a factor that a student brings in a classroom. This is a type of experience characteristic that can affect his or her learning ability. Attending seminars or conferences is also a type of experience where one hears many presentations, meets and talks to many people, and opens their mind to new ideas. These experiences also pertain to field trips. Field trips open a student's mind by seeing new things and going to different places. This is the best opportunity to see and understand more thoroughly what has been discussed in class (Kolb 1994).

Individual learning can be explained by using the experimental learning model by Kolb. This model shows that one can document experiments on the left side and convert them on the right side (Holzer and Andruet 1999). The final outcome is the conceptual thinking of the whole experience. It first starts from obtaining the information and then transforming it into conceptual thinking. This learning process is illustrated in Figure 2.

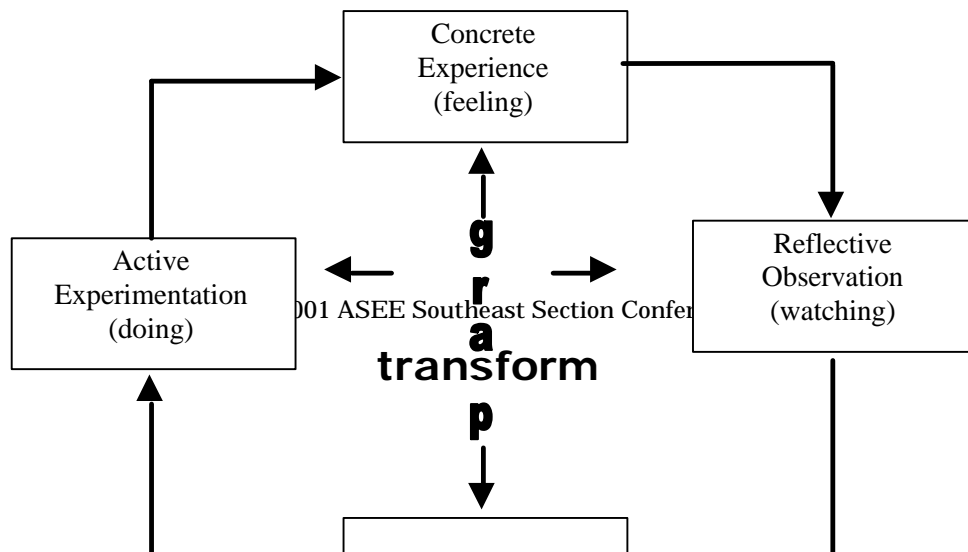


FIGURE 2: Experimental Learning Model (Kolb, 1994)

In these days with the overflow of technology, information is everywhere. A person can learn a lot just by going on the Internet and searching around. It is filled with countless of information waiting to be explored. The most effective individual learning, but also the hardest, is research. In order to research, one has to find sources to obtain the information needed. This can be found through the Internet, books, experience, people, experiments, data, library and more.

Conclusions and Recommendations

What is the most beneficial tool for learning? As discussed through out this paper, using only one technique is not beneficial. The non-active learning method is best used through PowerPoint to get information and material across to students. The active learning method is best used for communicating with students and getting them involved with the lecture. Individual learning is mostly done through experience and observations that help retain and understand material in class more thoroughly. These techniques should be combined together to better develop students' performance because each student has different levels of learning. Class room environment is like a laboratory of trial and error type. Teachers must try to use any or combination of these technique with feed back from students. Students and teachers are team members and they are all involved in learning process. In a class room management environment, students active participation make class move more effectively and teachers become extremely conscious about effective class time utilization. Once everybody become active team members, the class become inthusiastic about learning.

The purpose of this paper is not to determine which learning technique is the best for individual college students, but rather to try to combine the best methods of each technique. These methods are affected by factors that evolve over time, such as technology. Technology is a dynamic factor that affects the use of the learning process. As it evolves over time, it expands the variety of learning methods and changes the way each learning technique conveys the information from professors to students (e.g. PowerPoint, active learning, etc). Which combination of learning techniques are more beneficial for the college students at each point of time is a subject that needs and deserves further investigation through the input-output process. Data need to be gathered on these class room learning issues and analyzed for the betterment of students learning in a class room environment.

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