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TEACHING THE PRINCIPLES OF ECONOMICS WITHOUT "CHALK AND TALK": THE USE OF TECHNOLOGY IN THE ACTIVE LEARNING METHOD

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ABSTRACT

Economics remains an abstract subject to many undergraduate students. New approaches to teaching suggest that student-centered learning activities, in contrast to traditional lecture methods, can increase student interest and enhance their success. The author described technology that have been developed to enhance the effective of active learning method in the teaching of economic either micro or macro. This paper argues that content, not form is what is central to economics teaching.

Keywords *: Teaching Method, Active Learning, Student Centered Learning, Principles of economics, Internet, Technology, Web.*

INTRODUCTION

The programs in improving the teaching of economics have always attracted some economists' interest. Since the 1950s, the National Council on Economic Education and the American Economic Association (AEA) Committee on Economic Education have sponsored programs to improve basic teaching and assessment methods and to promote innovative teaching methods. In the general issues surrounding classroom teaching of economics, is growing.

Several recent books describe a wide range of teaching practices and explain how economists can use alternative teaching methods (other than chalk and talk) in various kinds of undergraduate courses (e.g., Becker and Watts 1998; Walstad and Saunders 1998). Other books focus on particular teaching methods, such as using classroom experiments, spreadsheet applications, or active and cooperative-learning assignments (e.g., Bergstrom and Miller 1997; Hazlett 1999; Keenan and Maier 1995; Porter and Riley 1995).

More evidence of increased interest in teaching economics and in the scholarship on teaching economics is provided by the rapid growth in the number of accesses or hits on the *Journal of Economic Education* Web site at http://www .indiana.edu/~econed/. From April 1995 to April 2000, the number of hits increased exponentially from 553 per month to nearly 47,000 per month (Figure 1).

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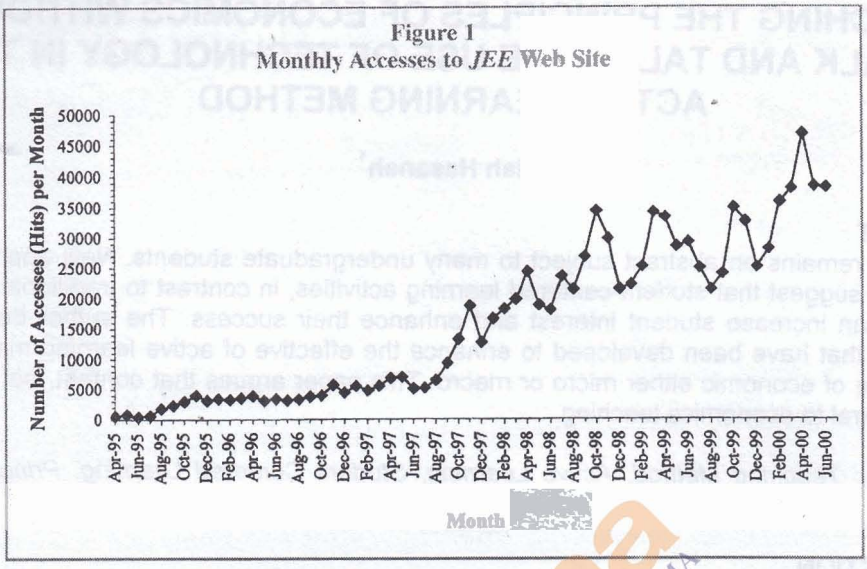
Figure 1
Monthly Accesses to *JEE* Web Site



THE ISSUE IN THE PEDAGOGY OF ECONOMIC TEACHINGS

The decline in the number of economics majors and students taking economics courses has become the issue of pedagogy in economic education. This issue has taken on increased importance. Economists have begun to think seriously about *how* economics is taught to college students, especially in introductory courses where students often experience economics for the first time. An important element in the current focus on teaching within the economics discipline is the recognition that current teaching practices, which rely heavily on the lecture format, are not doing enough to develop students' cognitive learning skills, attract good students to economics, and motivate them to continue coursework in the discipline.

DESCRIPTION OF THE STUDENT-CENTERED LEARNING APPROACH

Classroom instruction and improvement in teaching of economics are receiving increased attention in colleges and universities (Dare, 2001). In particular, an approach to teaching that emphasizes student learning as a complement to traditional lecture style content delivery is gaining importance and acceptance. The term student-centered learning (SCL) is often used to describe this pedagogy. More commonly in the literature, it is referred to as **active or cooperative learning** (*Marzano, 1992; Silberman, 1996; and Stage, et al. 1998*).

Student-centred approach in the teaching of economics is designed to provide the student with a highly flexible system of learning which is geared to individual life and learning styles. In such strategies, the teacher and the institution play supportive rather than central roles.

The application of approaches to student-centred learning has been tried out in recent years. These applications vary from systems designed to individualize learning within an existing educational or training environment by extensive use of resource-based learning, to systems where practically all of the conventional barriers to educational opportunity have been removed. With the latter, a potential student can be of any age or background, and can study in places, at times and at a pace which suit the individual rather than the institution.

In this method of teachings, students themselves must have a high responsibility for many aspects of their learning, so motivation must, of necessity, be high. Course material is usually broken up into a number of discrete units, which allow students to master one section before progressing to the next.

The individual course units are generally described in detail in the students' study guide. This document will also list the behavioral objectives or competence descriptors of each unit, thus enabling the students to have a clear idea of what is expected of them. Guidance will also be given on how these objectives may be achieved, and this may (ideally) allow students to select, from a range of alternative methods and routes, those particular ones which best suit their personal characteristics.

One thing that make the student centered approach or active learning approach different with the traditional method is on the learning materials. The materials must obviously be free-standing so that students can work with them on their own. They may be mainly textual, in the form of set books (or sections of books) or custom-designed material produced by the host institution, or may take the form of audiovisual, computer-based or (increasingly) multimedia materials. Whatever the form of the materials, they must be made available to individual students, either for study within the host institution or for study at home (eg in distance-learning courses).

The advantages of student-centered approach are explained as followed :

Advantages

- In most student-centered learning systems, the material to be studied is much more readily available than in a teacher/institution-centered course. The individual units of study can be worked at one at a time, and often at a time and place which suit the individual's personal circumstances.
- Since the course units are normally accompanied by a set of behavioral objectives or competence descriptors which spell out precisely that the student will be expected to do at the end of each unit, both student and tutor know exactly what has to be achieved.
- The course units are themselves designed to be student-centered and, in many cases, there are several ways in which the same course material may be approached. Ideally, students can select, from a range of options, those methods which best suit their individual needs, interests and personal learning styles.
- With most student-centered learning strategies, tutor help, counseling and guidance are generally more readily available and relevant than in more traditional courses.
- Because of this close relationship between tutor and student, together with the results of assessments on each unit, both tutor and student receive regular feedback on the student's progress.
- On a more general note, student-centered learning systems can provide greater educational and training opportunities for those who cannot attend institutions during 'normal' hours.

THE USE OF TECHNOLOGY IN ACTIVE LEARNING METHOD

The use of technology in the teaching of economics has been expanded in two ways:

- The university shifts their entire program to be online basis. This application can be observed from the experience of ***Virtual Universities*** such as the University of Phoenix (www. uophx.edu) is a private distance-learning franchise company that provides educational opportunities for approximately 48,000 adult students. The

University of California (www.california.edu) has a virtual university that coordinates all of the distance-learning opportunities offered through the state's accredited colleges and universities. Regional bodies, such as the Western Governors' Association (www.wgu.ed), the Southern Regional Education Board (www.srec.sreb.org), have also entered the virtual university market and Christopher Newport University (CNU) have been offering courses via computer since the spring 1993. The CNU Online program (www.cnuonline.cnu.edu) began as a pilot system developed by CNU faculty members.

- The university applied technology as complement to the teaching of economics such as the use of internet, world wide web, groupware, software, homepage, and etc

The changes in instructional technology, in particular the development of the Internet and the World Wide Web, are providing new opportunities for improving the student-centered approach . The challenge for instructors of economics is how to use effectively these new technologies to develop an active-student learning environment in economics courses.

The use of technology as a complement to the teaching of economics that has been developed by many economists and lecturers can be summarized as followed:

Stephen J. Schmidt (2003) developed an **Active and Cooperative Learning Using Web-Based Simulations.** The method developed class room simulations by using computers and World Wide Web in the teaching of economics especially in the context of principles of trade, investment, and public goods in the context of American economic history. This method has made those topics of economics become more interesting.

Scott P. Simkins (1999) use the **World Wide Web to develop a simulation** in the principles of macroeconomics course. The simulation is made to describe the meeting of the Federal Open Market Committee (FOMC). The activity encourages students to work together to increase their understanding of this important topic.

Joseph I. Daniel (1999) proposed the **Web to improve Computer-Aided Instruction** in Economics. Using JAVA programming to create interactive economic Web sites could greatly enhance the variety and quality of economic course materials. The WWW can contribute to development and validation of alternative teaching methods because it can be used to distribute virtually any type of media.

Linda M. Manning and Catherine A. Riordan (2000) implementing a **groupware** in the collaborative learning. A Groupware is a type of software designed to support people working together by facilitating basic work group processes such as communication, idea generation and evaluation, decision making, and planning and record keeping. Groupware effectively supports many forms of collaborative work activity, which has led to its rapidly increasing use in industry and could make it an excellent tool for facilitating collaborative work among students.

The same work was done by *Steven A. Greenlaw* (1999) using ***Groupware*** to facilitate group activities such as discussions, debates, joint papers, or team projects. Groupware combines elements of Web pages, electronic bulletin boards, and discussion lists to create a shared hypermedia environment in which multiple users can read and edit each other's files synchronously or asynchronously.

Jane H. Leuthold (1998) explained how to **build a homepage for economics class.** Homepages are a form of hands-on learning that allows students to learn on their schedule rather than yours. A homepage can be accessed from any networked computer installed with a browser, at any time of the day or night, from just about anywhere in the world. Homepages are not a replacement for classrooms and personal contact. Human face-to-face interaction both in class and out of class is an important part of the learning process.

Dennis A. Kaufman and Rebecca S. Kaufman use **Web-based interactive graphs** to enhance the comprehension of basic economic principles. Animation and interactivity combine with the accessibility of the Web to create a greatly improved learning environment. The ThinkEconomics Web site contains interactive graphs that can be used to analyze and explain changes in supply and market equilibrium, the construction of the long-run average cost curve, short-run profit maximization for a perfectly competitive firm, long-run market equilibrium under perfect competition, changes in aggregate demand and aggregate supply, and monetary fiscal policy in the aggregate demand and aggregate supply model (and with a money market graph). This approach to working with economic models facilitates the development of analytic and deductive reasoning skills.

Joseph Santos (2002) develop and implement **an Internet-Based Financial System Simulation Game.** The Financial System Simulator (FSS) is an example of an interactive game that the author has developed. The FSS is an Internetbased, interactive teaching aid that introduces undergraduate students to the domestic and international consequences of monetary policy. Although simulators are common among computer-aided interactive learning devices in today's undergraduate economics curricula, the FSS is different from the others because it allows students, who represent nations, to interact with each other rather than with a computer. The exercise provides users with real-time outcomes based on their decisions, as well as the decisions of other students. According to student surveys, the game helped students understand monetary policy and kept students motivated and interested.

Arnold Katz (1999) use a **computer-aided supplement** to the introductory microeconomics course that enhances students' understanding with simulation- based tools for reviewing what they have learned from lectures and conventional textbooks about comparing market equilibria.

Léonie L. Stone (1999) offers **a system of computer-based lecture (CBL)** design offers a method for greater student involvement with the lecture, even given the constraints of large classes. The system offers a method of integrating the computer and its many applications includes computer graphics, assisted notetaking, video, sound, and the World Wide Web (WWW).

Gregory Lypny (2003) uses an **online securities market** to engage students in their exploration of asset pricing in microeconomics courses.

Roger A. McCain (1999) developed an **On-line Textbook** and open the interaction by posing a question for the student.2 With the addition of JavaScript and other technologies, such interactive material can be presented on the World Wide Web.

THE CHALLENGE

The teaching of economics is evolving on many sides in terms of both content and delivery technology. All teachers face severe constrained optimization problems: which side should they keep up with?

Of course keeping up with the changing content in economics is more than a full-time job. The use technology in the delivery of subject material will be depend on the number of class, the time and effort to adopt technology and the university's information technology centre. To my opinion the most important thing is that the content of the course material that we have to keep up with not the technology itself. If someone is not keeping up with the changing content of the economics, one will quickly stop being an effective teacher of economics. But someone can continue to be a teacher although his knowledge of technology is not as fast the changing in technology.

CONCLUSION

The availability of new classroom technologies has presented an array of choices to instructors. However, approaches to implementing these methods have been piecemeal and hampered by both the difficulty of learning and integrating these options and the lack of support materials. One reason for this is the time and effort required to learn the technologies; a second is the lack of a vision for how these approaches can be integrated with more traditional methods.

As have been reported by Becker and Watts (2001) of an extensive survey of undergraduate programs offering courses in economics. They found that a very large part of undergraduate economic instruction is still heavily focused on the chalkboard as a delivery medium and the lecture/discussion method as the teaching mode. They lamented the fact that newer concepts such as SCL and increased use of new technology in the classroom are only slowly being adopted by college teachers of economics. They termed the current circumstance **"chalk and talk"** which has become a buzzword for the status quo in economics classroom instruction.

As has been discussed above, technology is something that can make the delivery method of teaching is easy and practice. Then the answer is that once the delivery system has been developed so that it can be used with little effort, then one can adapt it. More over using technology to make assignments and basic information easily available to students on the web, or in class folders on the college server, and using e-mail to communicate with students, means that we takes advantage of delivery systems that have progressed to where they are user friendly.

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