Teaching College Economics: Efficiency Issues

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Educators explain that the optimal method of teaching is the method that most closely matches students= learning styles. This fundamental law of teaching, according to the multidimensional Dunn and Dunn Model of Learning Styles (2000), implies that, because there is no one right way to learn, there is no one right way to teach. Each person possesses an optimal, diversified learning style approach to address, process, absorb, and remember new and difficult information.

Although all economics professors receive rigorous training in economic theory, they receive virtually no training in the principles of education.[1] It is our contention that, because of a lack of formal training in the principles of education, many college economics instructors may not be using their teaching resources efficiently and, consequently, may not be providing students with an optimal education.

What follows is a description of an experiment conducted by two professors at St. John=s University in their economics courses. We first explain how traditional methods of teaching economics may be biased in the context of teaching and learning style theory. We suggest that utilizing both group learning and alternative testing methods may be a potential strategy to improve student learning. We explain the method used to assess the outcome of utilizing group

[1]Bartlett and King (1990) question whether economics professors are teaching our students how to think like economists. Their pessimism is prompted, in part, by a lack of understanding among economics instructors about how to learn.

learning as an additional teaching resource, as well as alternative testing methods.

A biased teaching style?

An individual=s learning style is determined by a combination of environmental, emotional, sociological, physiological and psychological factors. The environmental variables include sound, light, temperature and design. The emotional variables include motivation, persistence, responsibility, and structure. Sociological variables reflect both with whom a student prefers to learn and the preferred manner in which the material is learned. Physiological factors include perceptual modality, intake, time, and mobility. Psychological factors refer to the way that a student absorbs and processes new information.[2]

With respect to learning styles utilized by students, it has been hypothesized that students process information analytically, globally or by a combination of the two methods.[3] Analytic learners process information by induction, reasoning from specific facts to a general conclusion. Global learners process information by deduction, reasoning from a general conclusion to specific facts. The majority of college students are global learners, approximately 50 per cent, and 28 per cent are analytic learners (Dunn, 1998). The remainder, classified as indifferent learners, may be either global or analytic depending on this interest in the particular subject, or they may use a combination of the alternative processing styles.

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[2]For a detailed description of each factor, see Dunn, R. and Dunn, K.

[3]See Dunn, R., and Griggs, S., (2000), Ch. 1, pp. 17-18.

Analytic learners and global learners have different environmental, emotional, sociological, physiological and psychological preferences. Analytics learn best in a quite, brightly lighted and formal learning environment. They prefer to start and finish one project at a time, learn best alone, are print-oriented and do not snack while learning. Globals, on the other hand, learn best with background noise, soft light and in a relaxed learning environment. They simultaneously work on several projects, take frequent breaks, learn best with peers, and enjoy snacks when learning. Globals prefer that new and difficult information is introduced anecdotally, especially in a way that humorously explains how the lesson relates to them. They generally are picture and illustration oriented. Whether students process knowledge analytically or globally, or by a combination of the two methods, can be determined from their preferences regarding sound, light, design, persistence, sociological preference, and intake (Dunn, 2000).

It is our contention that conventional methods used to teach college economics may be biased in the sense that they are favorable to analytic learners and are unfavorable to global learners with respect to the learning environment, teaching method, teaching approach and method of evaluating what students have learned.[4] Economics instructors predominantly utilize lectures, supported by notes written on the chalkboard, and focus on sequentially teaching of economics principles that ultimately lead to an understanding of the dynamic behavior of the economy (Benzig and Christ, 1997). Objective tests predominantly are utilized to evaluate what students have learned (Becker and Watts, 1996). According to learning style theory, this conventional pedagogy is favorable to analytic learners and unfavorable to global learners (Dunn and Dunn, 1995). One reasonable approach to compensate for this potential bias is to determine each student=s learning style and then match him or her with a professor who uses that particular teaching style.[5] However,

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[4]See Terregrossa R., and Englander, V., (2000) for a detailed discussion of possible bias in the pedagogy of college economics.

[5]As Charkins et al (1985) mention, it would be difficult to change a professor=s teaching style, but teaching style differences already exist. All it would take would be identifying them and matching them to students= learning style.

data regarding individual teaching and learning styles is not readily available. Another strategy to accommodate global learners is to utilize both group learning as an additional teaching resource, and essay examinations to evaluate what students have learned (Dunn and Dunn, 1995).[6]

Assessment of global learning and testing methods

In our experiment, applied to both the graduate and undergraduate courses, each class was randomly divided by students into groups of four to six members. Each group was responsible for appointing a chair and a recorder and assigning tasks to each member in whatever way that they deemed appropriate. Each group was responsible for conducting tasks common to the class, including reading, discussing and learning assigned material, and preparing written and oral reports of either computer projects or research papers. Since working with others is a characteristic of global learners, in this way we utilize a teaching method that more closely matches their learning style. It is important to note that group learning does not necessarily prohibit analytic students from learning or completing assignments alone.

Instead of using test scores to assess the outcome of our experiment, we relied mainly on students= responses to the following five questions regarding their inclination toward, and experience with, group learning:

- Do you prefer working or studying alone or with others?
- What are the advantages and disadvantages to group learning?
- Do you think that you learned more using this technique or with a more traditional style of teaching?

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[6]According to learning style principles, the ideal method of evaluating what students have learned is to accommodate a wide variety of differing learning style preferences among students by designing individually tailored testing methods. If global learners and analytic learners are evaluated with methods that match their respective learning style preferences, then grades associated with matching methods are likely to be greater than grades associated with mismatched methods. By matching testing methods with students= learning styles, test scores may more accurately reflect what students actually have learned.

$ Did you enjoy the class more this way?
$ Did this teaching style more resemble your work situation?

In the graduate course, an economics forecasting course, virtually all of the 22 students worked full-time in the New York City financial district and, consequently, were studying on a part-time basis. One written summary of each computer project from each group was required. In this way, group learning was introduced as an additional teaching resource.

The advantage cited by 82 percent of the class was that they developed a mutual dependence on the group as an important and reliable source of information. Because of this mutual dependence, students said that they were more motivated to be better prepared in order to help one another learn the material. Many students mentioned that they learned the material better by teaching it to other members of the group. All students who preferred group learning emphasized that, in terms of quality and quantity, it was a much more efficient way to learn. Two main disadvantages reported by all students were the difficulty of scheduling opportune times for group meetings outside of the classroom and the free-rider problemCsome students who did not contribute their Afair share.@

Over 85 percent of the students said that they learned more with group learning. Many students commented that the combination of group learning and lectures provided a practical way of teaching the material. Ninety-one percent said that they enjoyed the class more because of the utilization of group learning. Ninety-five percent answered that group learning very closely resembled their work situation.

In the undergraduate course, an applied micro economics course, many of the students also worked in the New York district, were part-time evening students, and were older than typical undergraduates. Each group was required to provide both a written and oral summary of their research project. In this way, group learning was introduced as an additional teaching resource.

Increased socialization among group members was the advantage unanimously cited by those who preferred to work with

others. They stated that they enjoyed making new friends and opening their minds to other points of view. Two disadvantages reported by all students were the free-rider problem and the scheduling problem. Those who preferred to work alone did so because of scheduling problems and a concern that there was too much socialization at group meetings. This group also seemed to be especially concerned with the prospect of some students not contributing their Afair share.@ However, 87 percent responded that they learned more with group learning, and all students reported that they enjoyed the class more this way. Sixty-seven percent responded that group learning resembled their work environment.

In the second phase of our experiments, we utilized the Productivity Environmental Preference Survey (PEPS) (Dunn, Dunn, and Price, 1998) to identify the learning style profiles of students enrolled in our principles of micro economics courses.[7] From these individual learning style profiler, global, analytic, and indifferent learners were identified. During the semester we then administered a series of examinations consistent with three different testing methods. The first examination was composed of objective and essay questions, representing a combination of both global and analytical testing methods. The second examination was composed of essay

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[7]The PEPS is designed specifically to provide a comprehensive approach to identify how college students and other adults learn and perform in their academic and occupational pursuits. It is a confidential self-report composed of 100 questions that can be completed in approximately 20 to 30 minutes. Each question is designed to identify an individual=s preference regarding each of the environmental, emotional, sociological, physiological, and psychological characteristics of learning style. For example, to determine a preference regarding sound, an environmental factor, the students are asked to answer whether they strongly disagree, disagree, are uncertain, agree, or strongly agree to the following questions:

1. I can block out noise or sound when I work.
2. I prefer to work with music playing.
3. Noise or extraneous sound usually keeps me from concentrating.
4. I can block out most sound when I work.

In a similar manner, preferences regarding all environmental, emotional, sociological, physiological, and psychological factors are identified. In this way each students= learning style strengths are identified, and appropriate recommendations are suggested to strengthen and improve their capacity to learn (Dunn, 2000).

questions only, representing a strictly global testing method. The final examination was composed of objective questions only, representing a strictly analytical testing method.

Accordingly, we expected to find that, for students who are strictly global learners, their grades associated with the global testing method would be greater than their grades associated with the analytic testing. For strictly analytic learners, grades associated with the analytic testing method would be greater than their grades associated with the global testing method.

But the results do not corroborate our expectations. Because virtually all students were classified as indifferent learners, we could not detect any improvement for global or analytic learners. One possible explanation is that, according to the principles of learning style, if students are indifferent to learning a particular subject, then their learning styles may reflect their indifference. Our findings may indicate that the students simply were indifferent to learning principles of economics. Or, they may indicate that perhaps we utilized the wrong instrument to identify students= learning styles. The PEPS is designed specifically for adult learners. It may be inappropriate to classify incoming college freshman as adults for the purpose of this experiment.[8] Alternatively, the results may indicate that our students are more adaptable to multifaceted learning stimuli, and, in this case, the PEPS or LSI may be unable to differentiate global and analytic processing styles.

[8]The Learning Style Inventory (LSI), (Dunn, Dunn, and Price, 1998) is specifically designed for use with younger students in grades 3 to 12, and may be more appropriate for first semester freshman students.