

Teaching E-Commerce: A Platform For Active Learning

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Abstract

The last several years, despite of the shakeout of the dot-coms, there has been an extreme interest in teaching E-Commerce. Many schools pioneered the development of E-Commerce programs. Relevant curricula at undergraduate and graduate levels were developed. Several conference and journal papers are treating the problems related to teaching E-Commerce. All of them agree that new pedagogies are needed in order to successfully teach E-Commerce. One of them is Active learning, which has not been explored so far with respect to the field of teaching E Commerce. This paper aims to propose that E-Commerce is a field naturally suited for active learning. The authors explore different active learning strategies and share their experiences in implementing them.

1. Introduction

In her award winning paper “ Challenges and Opportunities in E-Commerce education” Chan (2001, p.5) lists five challenges for E-Commerce education, namely new market dynamics, faculty resources, continuous curriculum innovation, technology structure and new pedagogies. Given the complexity of these, it is understandable that in general, the MIS faculty may experience problems and reluctance in trying out new pedagogies. However the authors of this paper consider experimenting with new pedagogies in the field of E-Commerce an exciting opportunity, because E-Commerce is one of the few subjects which cannot be taught without implementing active learning as a major (and possibly the only) way of learning. The contribution of this work is in the summarization of the authors’ findings over the last several years about what contributes to the creation of an active-learning environment and the corresponding relevant learning strategies and teaching resources for that purpose.

In the following section the nature of active learning and its relevance to E-Commerce teaching methodologies will be discussed. Then some experiences with the creation of active learning environments will be described, and then different teaching strategies suitable for E-Commerce will be explored.

2. Active Learning And Its Relevance To E-Commerce Teaching

The past decade has seen an explosion of interest among MIS faculty in the teaching methods variously grouped under the terms 'active learning' and 'cooperative learning'. However, even with this interest, there remains much misunderstanding of and mistrust of the pedagogical "movement" behind these words. (Paulson and Faust, 2001)

There are a variety of definitions for active learning. Bonwell (2001) claims that the use of the term “active learning” has relied more on intuitive understanding than on a common definition. Shenker et al. (1996) defines active learning as “...doing something and taking the lead to think about what they are doing” Bonwell and Eison (2001) state that in active learning beside read, write, discuss or solve problems, students must engage in high-order thinking tasks as analysis, synthesis and evaluation. Bonwell and Eison (2001) state that in active learning beside

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The first important characteristic is that active learning places less emphasis on the transfer of information and greater emphasis on developing analytical and critical thinking skills. Although transfer of information is important for teaching E-Commerce, the very fast development of the E-Commerce initiatives excludes the possibility of teaching in a lecture format. On-going changes to topics, courses and requirements are normal. Review and revision may occur as often as twice a year to stay proactive (Chan, 2001). In such a situation it is much more important to teach the students critical thinking skills, which will be used to acquire new knowledge than to transfer technical information, which in one year might be obsolete.

Another important feature of active learning is that students are engaged in activities, they do something than simply listen passively. The very nature of the E-Commerce curriculum requires that the students are involved in doing things. It can be experiential learning, also called learning by doing (Shenker et al., 1996), or it can be discussion, brainstorming, and project presentations. It is impossible to learn E-Commerce without browsing the Internet, looking for information and comparing information. These are natural activities for such a course, as compared to courses in other areas, where any activity different from listening to the lecture, requires a lot of initiative and imaginative effort from the instructor.

In the active learning classroom students generally must adopt “higher order” thinking, critical thinking, analysis, and evaluation. Most of the existing E-Commerce courses involve a project related to design and implementation of an E-Commerce system (Dunning et al., 2001). Such projects are powerful tools for the development of critical thinking skills, analysis and evaluation.

Active learning consists of three interrelated factors: basic elements, learning strategies, and teaching resources. The four basic elements (talking and listening, writing, reading, and reflecting) individually or in combinations are the building blocks common to all active learning strategies. The learning strategies (small groups, case studies and so on) provide opportunities for students to learn and apply academic content. A variety of teaching resources can be used to enrich these learning strategies.

Several appropriate E-Commerce courses learning strategies techniques will be discussed in section four. In the following section we shall share our experiences in creating an active learning environment in the E-Commerce classroom.

3. Creating an Active-Learning Environment

In their paper “Implementing active learning in the classroom” Shenker et. al (1996) list the following obstacles to active learning:

- Teaching through active learning involves breaking social norms
- Teaching through active learning involves surrendering control and taking risks
- Teaching through active learning involves advance planning
- Teaching through active learning involves effort from both teachers and students
- Teaching through active learning involves covering less material in class

Breaking the social norms is the first and major obstacle each of us experience when embarking on the risky business of teaching through active learning. The social norms in the traditional lecturing environment means that teachers stand and lecture, students sit and listen, teachers direct the work of a class section, students take notes, teachers ask questions, and students answer the questions.

Using active learning in the classroom requires changes in how we define our roles as teachers. It means spending less time center-stage as a presenter and more time off stage as a designer and manager of the learning environment and teaching process. In order to accomplish this, teachers need to consider three elements, essential to a workable active-learning environment:

- Clarifying course objectives and content
- Creating a positive classroom tone
- Knowing more about our students

Although E-Commerce programs are usually a product of collective thinking, the teachers of the courses are left with the freedom to choose their own balance between e-business strategy and technology issues. This needs to be reflected in the *course objectives and content*. According to Meyers and Jones (1993), active learning is expected to cut into the time teachers normally spend covering the content they think students should know. There is no hesitation that skills and ways of understanding E-Commerce are more important than covering as much information as possible. Without the appropriate ideas and understanding this information will not be retained for too long.

Creating a positive classroom tone requires that the lecturers convey their enthusiasm for what they are teaching. It is important to demonstrate confidence in student's learning abilities. There are many ways to personally communicate a positive classroom tone. A professionally designed and maintained course web-site will definitely spread the message that the teacher is confident and enthusiastic about teaching E-Commerce, although the personal touch like adding student friendliness, is also very important. A (functioning) web-messaging board or prompt reply to e-mail messages will also contribute to the positive tone. A well maintained course web site provides the opportunity for acknowledgement of any students' achievements during the semester, which has a good motivational effect on the class.

Knowing more about our students is important in any course, but in the case of E-Commerce its importance is even more pronounced. With the exception of few schools of our university, where enrolling for such a course has some rigid preliminary requirements, most of the students are coming from a diverse background; they have different attitudes, predispositions and interests. Developing of a survey to capture such information is not only desirable but also necessary for successfully conducting the course. Backgrounds, attitudes and predispositions are important especially in forming discussion groups and project teams. On-line surveys convey the message of professionalism and if the survey provides immediate feedback with its findings, it will help to build an atmosphere of trust and openness from the very beginning of the semester.

In the next section we will briefly summarize our experiences with some learning strategies and techniques in teaching E commerce.

4. Learning Strategies and Techniques

Exercises for individual students help them in mastering the essential material. Although most of the emphasis in E-Commerce classroom is placed on cooperative and collaborative learning, the individual work of the students is very important. The authors have successfully used several techniques aimed at enhancing student retention of the presented material. They are particularly useful in providing the feedback concerning the student understanding and retention of material.

The "*one minute paper*" is a highly effective technique for checking students' progress, both in understanding the material and in reacting to course material. One or two minutes are allowed to respond to a specific question. The response gives the teacher indication whether or not the students understand the material. Some sample questions are: "What is the difference between symmetric and asymmetric encryption?", "What are cookies?".

Muddiest (or Clearest) point is a variation of the one-minute paper. At the end of a class period, or at a natural break during the presentation the students answer the question “What was the “muddiest point” in today’s lecture”? For example it was discovered after a lecture on marketing, sales and promotion that the unclear point was “Costs of branding”. The use of this technique has two effects: feedback for the teacher, and a welcomed break during a lecture.

As already mentioned an *extensive e-mail communication* with the students was maintained during the semester. The amount of paper communication between the students and the instructors was reduced to a minimum. Usually the answers to the questions from the above two techniques were e-mailed to the instructors. The correct (or suggested) answers had to be posted immediately back to the students via e-mail, or published on the web site.

More in-dept discussion of the course material can be achieved by the *use of daily journal*. This technique can be applied on individual topics, e.g. “Protecting E-Commerce assets.” Class time can be set-aside for students to complete their journal entries. More complex questions or daily reports of latest news on the topic can also be considered by the use of this technique.

Another group of strategies specifically aimed at the support of group interaction and to improve learning in small groups. *Informal small groups* are typically short-term and can be used in simple tasks. In small groups students learn to be good listeners, to cooperate in a common task, to give and receive constructive feedback, to respect differences of opinions and to support their judgments with evidence. Meyers and Jones (1993, p63) specify some of the objectives of informal small groups. Small groups can be used to:

- Summarize main points in a text
- Assess level of skills and understanding
- Review exams, problems, quizzes, and writing assignments
- Process learning outcomes at the end of class
- Compare and contrast key theories, issues and interpretations
- Solve problems that relate theory to practice
- Brainstorm applications of theory to everyday life

One technique illustrating the use of small groups strategy is *Active review session*. In the traditional class review session the students ask questions and the instructor answers them. Students spend their time copying down answers rather than thinking about the material. In the active review session the instructor asks questions and the students work on them as a group. Then students are asked to show their solutions to the whole group and discuss any differences among solutions proposed. The content of the E-Commerce syllabus offers a wide variety of topics applicable to review sessions, just to mention a few used by the authors: evaluation of site management tools, evaluation and comparison of web-servers, evaluation and comparison of web-hosting etc.

Jigsaw group project is another technique suitable for the E-Commerce teaching environment. Each member of the group is asked to complete some discrete part of an assignment; when every member has completed his assigned task, the pieces can be joined together to form a finished project. The jigsaw technique was implemented in the authors’ classrooms when researching topics related to the international nature of E-Commerce. Each team member explored a different issue, like language, culture, infrastructure, and then the group applied their combined knowledge to tackle a case study.

Panel discussions and debates are two techniques, which can be applied when the students are asked to give class presentations or reports as a way of including the entire class in the presentation. Both techniques require a careful selection of topics. Panel discussions can be combined with another cooperative learning technique, *role-playing*.

Debates provide an efficient structure for class presentations when the subject matter easily divides into opposing views. An example of a debate conducted in the author’s classroom is the topic of privacy. The merits of different approaches or technologies can also provide good material for a debate.

Unlike the more traditional fields of business education, *games* are still not very popular in E Commerce education – maybe due to the time necessary for their development and the fact that everything changes so quickly that a game may be obsolete within a year or two. However some of the business principles in E Commerce may be supported by the use of teaching games.

From the prospective of learning outcomes, *cooperative projects* and informal small groups share certain similarities: students have opportunities to clarify their thinking through talking and writing, to test their ideas against other students, to appreciate new perspectives, and to practice group-communication skills. Cooperative groups work together over a longer period, such as several weeks or an entire semester toward a shared goal. Cooperative groups permit students to practice at a higher level positive interactions, individual accountability and group-processing skills. Depending on the emphasis of the particular E-Commerce course, the project can vary from the preparation and presentation of a business plan, to the development and implementation of a fully-fledged E-Commerce site.

Any discussion on active learning is incomplete without paying attention to the use of the *Case studies* teaching/learning strategy. A successful case study involves many feature characteristics of active learning: student-teacher interaction, collaboration, problem solving, reflection, and extensive discussion. Another value of a case study is its potential for involving students in discussions that call for a higher-order level of reasoning, such as analyzing situations, forming judgments, and evaluating solutions.

A case is a description of an actual situation, commonly involving a decision, a challenge, an opportunity, a problem or an issue faced by the managers in an organization. According to Huff et al. (2000) cases are an effective tool to test the understanding of theory, to connect theory with application, and to develop stronger theoretical insights. Cases frequently make learning more interesting and more fun. The same authors provide an extensive collection of case studies reflecting issues from hardware and software to social and legal implications.

5. Conclusion and Suggestions for Future Research

Teaching methodologies have evolved over time. Implementing a suitable teaching methodology depends greatly on the nature of the course and the content coverage. We found that in E-Commerce courses, active learning improves retention of materials and stimulates an interest in learning, perhaps due to the involvement of the students in discussions, project presentations, and debates, to name a few. Furthermore, teacher-student interaction is greatly enhanced through active-review session, analysis and evaluation of class projects. Creating an active learning environment is an important factor. We reiterate that using active learning in the classroom requires changes in how we define our roles as teachers. It means spending less time center-stage as a presenter and more time off stage as a designer and manager of the learning environment and teaching process. In order to accomplish this, teachers need to consider three elements, essential to a workable active-learning environment: clarifying course objectives and content, creating a positive classroom tone, and knowing more about our students.

With the numerous learning strategies and techniques proposed, additional research should also be conducted to further examine the extent to which these strategies improve learning. More work should be done to test on students' perception on the various strategies and techniques being used in the classroom. The creation of a testing instrument may be another venue to explore in testing these strategies and techniques being proposed.

This study provides a broad overview of active learning, creating an environment for active learning in the classroom, and the learning strategies and techniques. The authors found these to be a positive contribution to teaching methodologies in E-Commerce courses. A closer look at the specific strategies and techniques and the perceive needs of the students will add to our understanding of the potential of this methodology and help focus attention on ways to better satisfy the teacher's and student's fulfillment in E-Commerce courses.

References

1. Alexander, S. (2000). E-Learning Developments and Experiences, *Education and Training*, 43 (4/5).
2. Bonwell, C.C. (2001). "Risky Business: Making Active Learning a Reality", *The Professional and Organizational Development Network in Higher Education*, retrieved on August 27th 2002 from <http://www.ucet.ufl.edu/ProgramService/topic1-6.htm>.
3. Bonwell, C.C. and Eison, J.A. (2001). "Active Learning: Creating Excitement in the Classroom", Retrieved on September 3rd 2002 from <http://www.ntlf.com/html/lib/bib/91-9dig.htm>.
4. Chan, S.S. (2001). "Challenges and Opportunities in E-Commerce Education", *Proceedings of the Seventh Americas Conference on Information Systems*.
5. Dhamija, R., Heller, R. & Hoffman, L.J. (1999). "Teaching E-Commerce to a Multidisciplinary Class", *Communications of the ACM*, 42 (2).
6. Dunning, K.A., Vijayaraman, B.S., Krovi, R. & Kahai, P.S. (2001). "Graduate E-Business Program Design and Evaluation", *Journal of Computer Information Systems*, 42 (1), 55-64.
7. Huff, S.L., Wade, M., & Schneberger S. (2002). *Cases in Electronic Commerce*, 2nd Ed, McGraw-Hill Irwin.
8. Meyers, C. and Jones, T. B. (1993). "Promoting active learning: strategies for the college classroom." Jossey-Bass Inc.
9. Neufeld, D.J, and Haggerty, N. (2001). "Collaborative Team Learning in Information Systems: A Pedagogy for Development Team Skills and High Performance", *Journal of Computer Information Systems*, Fall 2001.
10. Paulson, D.R., and Faust, J.L. (2001). "Active Learning in the College Classroom", Retrieved on September 3rd 2002, from <http://chemistry.calstatela.edu/Chem&BioChem/active/main.htm>.
11. Shenker, J.I, Goss, S.A, Bernstein, D.A, (1996). "Instructor's resource Manual for Psychology", Boston: Houghton-Mifflin.

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