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Emerging Technologies in the IS 96 Curriculum Model

Kevin Lee Elder
Department of Business Administration, Angelo State University, kevin.elder@mailserv.angelo.edu

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By
Dr. Kevin Lee Elder
Department of Business Administration
P.O. Box 10891, Angelo State University
San Angelo, TX 76909
(915) 942-2383
(915) 942-2384 (FAX)
kevin.elder@mailserv.angelo.edu

INTRODUCTION

The IS 96 Curriculum Model has more areas of instruction and more skills to teach than any previous Information Systems curriculum model. Students in programs implementing this model need newer techniques to convey the material. There are many emerging technologies in the information systems technology arena:

Multimedia

World Wide Web

Pen-based Systems

Wireless LANS

Groupware

ATM.

We discuss these emerging technologies and expose students to the skills necessary to utilize them, but we don't use them to teach the information systems curriculum. We need to be using the emerging technologies in our classroom instruction to prove how valuable they are to the industry our students will graduate into.

In Information Systems Departments around the country we have designed several multi-disciplinary courses to cover material that would typically be covered in one or more business courses. One such course is Accounting and Financial Information Systems. This courses covers material from three separate disciplines. In such a course the students are overwhelmed with material from different areas and need extra tools to help them learn. There is a perfect match between this problem and the strengths inherent in many of the emerging technologies.

To accommodate the short amount of time and space I will use Multimedia as the example of emerging technologies and how we should integrate them into our curriculum model. Multimedia presentations involve the use of a computer, projection device, graphical user interface, scanned snapshots, digital video, digital sound, and any other media that is combined into the computer system in use. This combination of media allows the user to go through and interrelate more information than is possible or practical in a single media presentation device such as a textbook, chalkboard, or overhead display. The hyper-linking and interrelating of topics and media available in the latest multimedia authoring software allows a better presentation of the material than ever before. This technology makes multi-disciplinary courses easier to understand for the students and easier to present for the faculty. Since the IS 96 Curriculum Model has

more areas of instruction and more skills to teach we need to take a serious look at why we still use the same old methods to present this new material.

Multimedia presentations allow the students to review the classroom material or add to the classroom presentations at their own pace and at there own convenience. Multimedia needs to be a permanent fixture in the classroom and be in place in the lab rooms.

If multimedia devices and other emerging technologies are so helpful in conveying knowledge, why don't we use them more? There are many reasons that come to mind:

Technology not readily available

Lead time for lectures

Time to develop lectures

Change

Cost.

I will cover each of these in brief.

TECHNOLOGY NOT READILY AVAILABLE

The technology is readily available today. Most faculty don't even realize it is available. Many, if not all, faculty that have computer access have access to passive multimedia software. Passive multimedia software allows the presenter(s) to present the material with little interaction and typically one path through the slides of the presentation. Powerpoint is bundled in Microsoft Office and is an excellent presentation system. Faculty think it is a graphics program and as such of little use to the average faculty. It is in fact very applicable to all faculty as another tool readily available to augment lectures and presentations. Lotus Freelance, and Word Perfect Presentation are bundled in the other office/suite products and offer the same or similar capabilities as Powerpoint.

Passive multimedia can be used in more than the classroom. With this passive multimedia software in use the lecture, or portion of lecture, can be replayed to further enforce the learning outside of the classroom. The same office/suite available in the faculty's office is usually available to the student. There is debate as to whether it can be used only as a second presentation or as the first. If you have students who miss class, as we do quite often in our evening program as students work late, a multimedia presentation will foster more learning than getting a copy of somebody's notes. If you ever have the unfortunate opportunity to hear a tape of yourself lecturing you'll understand why we need other methods of presenting material. Multimedia may not be the best method for learning but it is better than some methods. If faculty need incentives to incorporate multimedia into their lectures they need only request students leave their notebooks overnight for review. This is an inexpensive, quick assessment method that every faculty should perform. Most faculty will find that they are not conveying as much material as they think they are conveying with their single media delivery systems. Multimedia presentations, on-the-other-hand, allow the faculty an opportunity to ensure what gets into the students notes and memory banks.

The software is readily available and the hardware is available too. On our campus the instructional resource center has several roll carts with IBM PC or MAC, overhead projector, and display panel for check out. Many faculty think they are not available and don't use them. If more or all faculty were requesting their use you can expect that more would be acquired and future classrooms would be outfitted with them wired into the room. However, even if they were not available globally on campus one can be created for about 10,000 dollars and is well worth the department's expense. We have one in our

department and it is in constant use. Angelo State University is an excellent example of the technology, use and acquisition of these resources. They have created several rooms for multimedia presentations and the technology is in use by many faculty and many more are now requesting it. They have recently established a lab room for the faculty to develop presentations in use in the student labs and classrooms.

LEAD TIME FOR LECTURES

Many faculty feel the crunch of lead time for lectures. You have two committee meetings before class and leave the second meeting before it ends to even get to class on time. While walking to class you try to remember what you are going to teach and plan the lesson. This scenario is happening all too often on almost all college and university campuses. A priority shift from service to the classroom is in order if emerging technologies usage is to be successful, but we all need to make this shift. Multimedia gives us the tool to ask administration for relief and time to emphasize teaching in our portfolios.

The need to assess the learning outcomes and continually assess the curriculum can be used to offset the time and cost of implementing multimedia in the curriculum. Multimedia leads to better monitoring of the material and interactive multimedia allows for constant assessment and collection of data. With interactive multimedia the students interact with the presentation and are prompted for responses that are recorded by the software. This type of multimedia has been more expensive and taken longer to create than the passive type. However, with the explosion of the World Wide Web, the cost for this interaction has dropped significantly. The tools for this type of presentation have become far easier to develop. Java and other application software available for use on the Web is inexpensive and readily available. At Angelo State University the students will have an opportunity to take a course entirely based on the Web rather than in the classroom this summer. The change in focus from the classroom could alleviate this problem.

TIME TO DEVELOP LECTURES

If faculty took more time to develop lectures they would not use the same examples to teach the old material. Faculty with more time to prepare lectures would find new examples to teach more and newer material. The creation of multimedia has been shown to take up to 90 hours per chapter in the average class. Therefore, in the beginning the faculty member needs more time to teach. The benefits will outweigh the costs if presented correctly to administration. The time needs to be given and only temporary relief from administration is the answer. Dr. Stephen Portch in his keynote address at the Georgia College and University Teaching Conference implored the faculty to get out of the box they have defined for themselves and look for methods to enhance the educational process.

Administrations around the country are looking for faculty involvement as long as it is well thought out and planned. We have many opportunities for summer and other funding to augment the support and time we have to develop lecture material and model courses and curriculums. The onus is on the faculty member to assess themselves and their current methods of teaching and propose to change the presentation media. Not to mention the learning and continuing education possibilities inherent in the development of these leading edge technologies for curriculum presentations. One Dean at a college in Georgia has gone so far as to outlaw the use of overhead projectors in the classroom in his effort to get faculty to change their mode of teaching.

CHANGE

Change is always a reason to not do something new. Faculty members are no different from the average person in their fear of change. In the University System of Georgia they are going to be faced with a quantum leap in change due to the new Chancellor Dr. Stephen Portch and the new direction they are heading. The easiest example is the planned switch from a quarter system to a semester system. This change will require time and thought to be done correctly. During this leap of change multimedia can be added to the mix more easily than if it were the only change. Multimedia can be a tool that will make the change from quarters to semesters easier to manage.

Here at Angelo State University we are faced with the same problems other schools are facing. With the emergence of the Web students have the opportunity to take classes on the Internet from Nobel Laureates around the world. If we continue to teach the students only in the classroom, with only chalk and mono-media we will steadily lose our students. Change, like risk, is normally looked at in a negative manner. We typically have a natural aversion to change and risk, but as the champions of knowledge and growth we must lead the charge into a change of curriculum for the future.

COST

Cost is always the first or last reason to not make a change. The cost of changing to emerging technologies seems high. Balanced with the loss of students to programs and institutions that have embraced technology the cost of acquiring and utilizing emerging technologies seems small. Students are demanding more in college as they are presented with more technology in the preschool and grade school system. With all the multimedia programs and software utilized in grade schools today higher education is behind the eight ball and needs to catch up in a hurry. The average college professor should spend a day or week in the grade school systems around the country. My son has a multimedia program that not only teaches reading and writing it also ,with the touch of a button on the main menu, converts the entire program into Spanish. We in higher education need to make sure we are indeed higher in the methods we use to convey knowledge to our students.

The current board of regents for the University System of Georgia is aware of this fact and is looking for ways to close the gap. Like many boards and funding places around the nation they are expecting faculty to present projects for funding that will change the methods of teaching. We as faculty need to be addressing this problem and finding ways to access the technology with less cost. Passive multimedia and active collaboration across disciplines are two methods that can be used to lower or spread the cost out.

CONCLUSION

Dr. Andy Whinston in his keynote address to the Information System Education Conference, Louisville, 1994, addressed the need for IS faculty to rethink how we convey our knowledge to students. With the advances made on the Internet, the Worldwide Web, digital libraries, cd-rom storage devices and hypermedia we are in the dark ages when we use only a textbook, overheads, and the chalkboard to convey knowledge. Multimedia is a tool that we cannot overlook in the teaching of Information Systems. With the ever increasing multi-disciplinary aspects we need new and improved presentation tools.

With information systems programs being spread across multiple disciplines it is highly important to add methods to aid in the presentation of the material to the students. In our Accounting and Finance Information Systems Course we have developed several multimedia presentations to aid the students from the varied disciplines augment their background. In the end, the students are learning more, prerequisites for the course are reinforced, and more interaction with the faculty and fellow students from varied backgrounds is increased. Multimedia Presentations is a solution to many of the problems we face in teaching multi-disciplinary courses.

The other emerging technologies are not as mature as multimedia. ATMs, wireless LANs, groupware, etc. are still expensive and require steep learning curves to get them implemented in the classroom. This is where partnerships with industry are necessary. Industry is in a constant search for alpha and beta testers for their emerging technologies. By offering up your school and department to test products you will get emerging technologies into the classroom and lab rooms with a nominal cost. We need to share with our colleagues what we are doing with these technologies in our curriculums around the country to make our national model more complete and up-to-date.

REFERENCES

References available upon request from author.