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Overview of Three Technology and Education Journals

The growing role of technology in education is evident in most spheres of learning. The number of journals and magazines on this subject alone testifies to the scope of technologies infiltration into various modes of learning and the increasing number of educators actively implementing technology into their instruction. Educators often cite various rationales for using technology in education. M.D. Roblyer (year) charts out the various elements of a rationale for using technology in education in the first chapter of her book *Integrating Educational Technology into Teaching*. The elements include: “motivation, unique instructional capabilities, support for new instructional approaches, increased teacher productivity, and required skills for an informative age” (p. 11). And it is towards many of these motivational goals that the articles in various journals on education and technology often base their studies.

It is especially important for educators to form a vision of how technology should be integrated into instruction to facilitate the achievement of specific teaching goals. Towards this end, there are many journals that include findings from studies, tech tips, and other relevant information on the advantages as well as disadvantages to integrating technology. This paper will attempt to give an overview of three journals/magazines (*Computers in the Schools*, *TechTrends*, *Journal of Research on Technology in Education*) by reviewing a selected sample articles from each between ???what dates??? within them that speak to the issues of technology in education. The sample of articles should give an idea of some of the important and current issues that are being discussed today as well as impress the need for educators to be aware of them.

Computers in the School

Computers in the Schools is self-categorized as “the interdisciplinary journal of practice, theory, and applied research.” The journal is supported by an editorial review board composed of leading professors and specialists in the education setting. The articles not only appeal to educators but also to administrators and directors in education. The issues are thematically organized around topics relating to the various roles that computers play within the school setting. The articles describe the practical applications of the computers in classrooms and other educational settings while also providing theoretical frameworks to the discussion of the various technology trends and applications. Each article is preceded by a summary of the article along with background information on the author. The articles evince scholarly research coupled with practical instruction.

Following are the summaries of some how many???1-4 of the articles from two fairly recent what years issues of *Computers in the Schools*. These issues serve to provide a sampling of the kinds of articles covered in this journal. The theme for the articles in

Volume 21, Numbers 1/2 of 2004 for *Computers in the Schools* is “Integrating Information Technology into the Teacher Education Curriculum: Process and Products of Change.” The articles covered within this issue focus on the need for instructors to not only learn about technology skills but learn how to effectively *integrate* technology into their teaching.

“Redesigning the Teacher Education Technology Course to Emphasize Integration”
(Charles Graham, Richard Culatta, Mitchell Pratt, Richard West) pp. 59-72

This article describes Brigham Young University’s (BYU) instructional technology course and the various stages that the course went through in order to place more emphasis on technology integration. The introduction emphasizes the increasing problem that exists with the availability of technology superseding the available number of teachers who are competent enough to use technology in their teaching (p. 128). A description of the redesign for the course to insure more integration of technology included the following features: “(a) adding a basic technology skills prerequisite for the course, (b) requesting a curriculum change requiring secondary education majors to take the course for two credits instead of one, and (c) introducing students to program portfolio concepts before taking the course” (p. 143). The article covered the potential benefits of implementing this redesign into the curriculum.

2. “Principles of Technology Integration and Curriculum Development: A Faculty Design Team Approach” (Gregory L. Waddoups, Nancy Wentworth, Rodney Earle)
pp. 15-24

This article is based on strategies implemented at BYU for the establishment of curriculum design teams. These teams are made up of “School of Education faculty, public school personnel, and instructional design and technology specialists” (p. 15). The importance of collaboration for the effective integration of technology into preparatory programs for teachers is emphasized. The article outlines the definition of design teams and the development of initiatives and alliances to ensure the sustained success of creating changes within the curriculum. Teachers here and above do you mean faculty?

Both of these articles outline methods for developing teacher education programs that encourage the integration of information technology into curriculums. how does #1 do this –it just talks about the design for getting the program and courses set –not much about what happens within the courses The other articles in this issue of *Computers in the Schools* also touch on similar themes. Some of the titles of these articles include: “Using Technology in Teacher Preparation: Two Mature Teacher Educators Negotiate the Steep Learning Curve,” “Supporting Change in Teacher Education: Using Technology as a Tool to Enhance Problem-Based Learning,” and “Faculty-as-Students: Teacher Education Faculty Meaningfully Engaged in a Pre-Service Technology Course.” These articles present the procedures of various studies conducted and the conclusions drawn in regards to technology integration. References to other studies and models provide additional information on the issues covered.

Other issues of *Computers in the Schools* cover themes ranging from methods and curriculum for teachers, the use of computers in specific fields like language arts and mathematics, to distance education. The theme for the articles in Volume 20, Number 3 of 2003 is “Distance Education: What Works Well.” Distance Education is a popular topic that is currently eliciting a lot of discussion. The articles within this particular issue focus on the various concerns that come up when distance education is integrated into the school curriculum. Theories and practices for online based learning are presented in the various articles as well as strategies for both teachers and students to successfully adapt to the online learning environment. The following summary of one of the articles addresses some of these issues.

1. “Building Active Online Interaction via Collaborative Learning Community” (Chih-Hsiung Tu and Michael Corry) pp. 51-60

Suggestions for how to move from the traditional learning environment to the online environment is discussed within this article. Emphasis on collaboration as a major component of online interaction was incorporated into activities suggested for online learning. Some of the activities included team final projects and online discussions. The article also outlined some of the potential negative limitations to this design. Overall, it highlighted the positive learning benefits of online interaction, which is built upon the theoretical constructs of interactivity, social context, and technologies.

These are some of the titles of the other articles within this issue: “Faculty Development: Using Distance Education Effectively in the Classroom,” “Get a Life: Six Tactics for Optimizing Time Spent Online,” and “Determining If Distance Education Is the *Right* Choice: Applied Strategic Thinking in Education.” Overall, the articles in *Computers in the Schools* present the use of technology as a useful component of education. The various studies center on the implications and effects of adapting and integrating technology into education. The positive benefits as well as the limitations to integrating technology into classrooms are also explained. The scope of articles suggests the multi-faceted nature of technology in education along with the growing importance of learning how to successfully incorporate computers into learning.

TechTrends

TechTrends is a journal that covers issues dealing with technology and education. It is not just relegated to education that takes place in the K-16 classroom setting but also extends to education in other disciplines and settings such as the health field. It is the official publication of the Association for Educational Communications and Technology (AECT) for educators and trainers. *TechTrends* provides information on available technology resources, links, and news updates on conferences and tech-related activities as well as reviews of products and events. The coverage of topics appeals to a general audience interested in learning about the ways in which technology contributes to learning. The articles in each issue loosely center on a general theme. Following are brief synopses of some of the articles within two different issues of *TechTrends*. The theme of the Nov/Dec-2004 issue of *Tech Trends* is “The Power of Computer Enhanced Learning.” Such a general heading allows for the inclusion of quite an array of articles.

1. “Peek a boo...I’m watching you: Spyware” (Don E. Descy) pp. 5-6

This short article serves as a wake-up call to those who are unaware of the negative effects of undetected spyware. It provides a brief summary of the major kinds of spyware that are in circulation such as dialers and pop-up generators. Helpful suggestions for how one might be protected from spyware are also provided.

2. “A Student Online Plagiarism Guide: Detection And Prevention Resources (and Copyright Implications!)” (Rosemary Talab) pp. 15-18

This article serves as an introductory overview of the growing problem of students plagiarizing from online sources. The following issues are briefly covered: term paper sites, plagiarism detection programs, and copyright policies. Tips for preventing plagiarism, as well as how to search for it are outlined. Various resources for both teachers and students on how to detect plagiarism as well as how to avoid it are also presented.

3. “Using Internet Assessment Tools for Health and Physical Education Instruction” (Roland Thornburg and Kory Hill) pp. 53-55

The growing concern over obesity in children and adolescents in this country has led educators to study ways in which to counteract this problem. This article emphasizes the role that the integration of internet based activities in physical education classes can help combat this issue. The reports from a study conducted in which middle school students used internet assessment tools to learn about health-related issues supported the idea that using computer technology helps to motivate students to become more engaged with the course.

Some of the titles of the other articles within this issue include: “Building Learning Communities with Distance Learning Instruction,” “Creating an Effective Online Distance Education Program Using Targeted Support Factors,” and “Using the Internet Effectively for Advocacy in Health Education.” All of these articles support the theme “The Power of Computer Enhanced Learning” as they demonstrate different ways in which technology use in different spheres can improve education.

The theme for the July/August-2004 issue of *TechTrends* is “Supporting and Connecting with Our Students Online.” The articles cover important issues from implementing a new IT curriculum and the standards that go with it to the role of games in E-learning. This issue also featured announcements for various upcoming conferences on technology related subjects as well as reviews of conventions that had already taken place. Below are short summaries of a few of the articles in this issue.

1. “Knowledge Building Community: Keys for Using Online Forums” (Qing Li) pp.24-28

This article emphasizes the importance of community building. Social interaction is viewed as the key to the knowledge building that takes place within online learning environments. The article describes a list of strategies for creating an online forum. The various considerations include: context, content, role of facilitator, format, organization, design and development, and assessment. A table outlines the major points within the discussion of each of these strategies.

2. “Gaming, Teaching and Learning: An Interview with Kurt Squire” (Joe Landsberger) pp. 4-7

This interview with Kurt Squire took place after his keynote presentation “Digital Games and Education: Beyond Play to Pedagogy.” He answered questions in regards to the role of “games” in education and the fun-factor involved. His experiences in gaming as well as his descriptions of the different kinds of games in regards to their educational value are covered. Squire also cites authoritative references for those interested in further study of gaming and education.

3. “Assessing Online Learning and Teaching: Adapting the Minute Paper” (Selma Vonderwell) pp. 29-31

This article accesses the results of incorporating the Minute Paper format in two online classes. The Minute Paper functions as an online journal that opens up a medium of communication between the teacher and student. Students respond to questions that inform the teacher about their progress as well as areas where they need improvement and areas where they feel that the instruction could be modified. This interpersonal venue serves as a useful tool for assessment of online instruction.

Some of the titles of the other articles and features within this issue include: “A New Curriculum For a New Age,” “Instructional Technologies in Developing Countries: A Contextual Analysis Approach,” and “Professional Ethics.” Overall, the articles in *TechTrends* cover many of the practical issues that educators are confronted with in their use of technology. The articles are fairly short in length (2-4 pages) and they serve more as an informative heads-up than as detailed analyses of studies on technology and learning topics.

Journal of research on Technology in Education

Journal of Research on Technology in Education is a quarterly publication that is published by the International Society for Technology in Education (ISTE). Each issue covers about 5-6 articles that report on research conducted in the area of education and technology. The articles outline the methods, data, results, and evaluations on the studies conducted. The articles focus on theoretical and conceptual frameworks that figure around educational computing. Each article is preceded by an abstract and the various charts and tables along with the extensive references further demonstrate the depth of

scholarly research. The journal is geared towards those interested in learning about research in educational technology. As the articles often reference specific educational/technological models and frameworks along with other studies, at least a general working knowledge of technology in education issues is assumed.

The various issues of *Journal of Research on Technology in Education* are not centered on a specific theme other than what the title of the journal suggests. The articles cover a wide range of topics within technology in education from evaluations of reading software programs developed at particular schools to the studies on mentoring online. Following are brief summaries from some of the articles from the Winter 2004-2005 issue (Volume 37 Number 2).

1. "Web-Based Learning: How Task Scaffolding and Web Site Design Support Knowledge Acquisition" (S. Kim MacGregor and Yiping Lou) pp. 161-175

This article details the research on the effectiveness of WebQuests for teaching fifth-grade students. The research was primarily concerned with the effect of instructional scaffolding on the students' experience with WebQuest. The objectives, procedures, data gathered, and results are documented. The results showed that teachers' knowledge of the sites as well as how they help students' learning is important. Also the study showed that "conceptual scaffolds in the form of a study guide and a concept mapping template supported students as they were engaged in learner-centered resource-based learning" (p. 172).

2. "Implementing Partnership Across the Curriculum with Technology" (Blanche O'Bannon and Sharon Judge) pp. 197-213

Due to the increasing emphasis on technology integration and the need for teacher training, the role of the Project ImPACT model, which was created to facilitate the use of Preparing Tomorrow's Teachers to use Technology (PT3) project, is analyzed. Areas of emphasis within the study included: "access, professional development, support, incentives, and evaluation; however, the remaining conditions were embedded within the model and assisted achievement of project goals" (p. 201). The results showed that Project ImPACT did help teachers to integrate technology into their instructions and improve their own technical skills.

3. "Bridging the Perspectives and Developmental Needs of All Participants in Curriculum-Based Telementoring Programs" (D. Kevin O'Neill and Judith B. Harris) pp. 111-128

Telementoring (online mentoring) is viewed as a very useful tool in supporting learning. This article stresses the importance of giving "more conscious attention to the developmental character of telementoring relationships" (p. 111). The idea that one needs to grow into the roles of telementoring frameworks the experiments conducted. The article describes the three strategies used: iterative cycles of telementoring, direct

facilitation, and open access to models. These strategies emphasize the developmental needs of the mentors in conjunction with the success of the student participants.

The titles of the other three articles in this issue include: "Teachers' Informal Collaboration Regarding Technology," "Research Priorities in Educational Technology: A Delphi Study," and "An Evaluation of the Merit Reading Software Program In the Calhoun County (WV) Middle/High School." These articles are quite varied in scope but all figure around the role of technology in facilitating education.

In comparison to the content in *Computers in the Schools* and *TechTrends*, this journal is more specialized. The formatting of the articles denotes more in-depth scholarly research and sophistication in method. The articles included detailed information on the research conducted such as criteria/objectives, procedural steps, data retrieved, interview results, and recommendations for future research. Data were often organized into charts and tables. Some of the articles appeared to require some prior knowledge in the field. Both *Computers in the Schools* and *TechTrends* did not use as much technical jargon or refer to other research nearly as much.

A recurring topic in all three journals was that of the need to "integrate" technology into instruction. And to this end, teachers need to receive adequate training and support. Roblyer (year) emphasizes the need for teacher training as the success in these technology programs is often contingent on having knowledgeable teachers who have received adequate instruction. In addition, support from personnel at all levels needs to be elicited in the planning and implementation of these programs (p. 29). Some of the suggestions cited in these articles emphasize the importance for the following points as succinctly laid out by Roblyer. They include: "hands-on integration emphasis, training over time, modeling, mentoring, coaching, and post-training access" (p. 30). John W. Hansen and Gerald G. Lovedahl in their article "Developing Technology Teachers: Questioning the Industrial Tool Use Model" also emphasize the idea that it is imperative that improvements be made in the training of the teacher who serves as "critical variable" in the implementation of technology in the classroom. Their central claim is that "Without the support and cooperation of teacher preparation institutions to prepare teachers qualified to teach for technological literacy, the focus of secondary technology education programs will continue to be based on technical (tool use) competencies, and the goals of technological literacy will never be realized." There is obviously a need to pay more attention to teacher training as this is an issue that figures quite centrally into most discussions of technology in classrooms.

Another popular topic revolves around the issue of distance learning. The practice of interaction between students and teachers as well as between students and other students is viewed as a necessary component for the success of distance learning courses. Distance learning activities are helping to re-characterize the ways in which people learn. Much study has been done and is currently taking place on the effectiveness of distance learning. Researchers are finding that some of the components that contribute to satisfaction in such learning environments include the level of interaction as well as the

support received during the course (Roblyer, year, p. 194). Such studies reemphasize the importance of collaboration even in faceless online environments.

With the integration of technology in education, teaching styles have begun to adapt to the online environment as evidenced by the use of WebCT and Blackboard among many other programs. Asynchronous and synchronous learning formats are adopted by many instructors. Often proponents of online courses cite the argument that the interactive environment allows for more effective learning compared to traditional forms of instruction. Lesta A. Burgess's (year) study on the use of WebCT for two sections of an industrial technology course conducted in order to determine its viability as a way to conduct classes online showed results that support the idea that WebCT is effective for those students who are at ease with using technology and who are not confronted with major technical troubles. Such studies on instructional tools, like WebCT, for the online teaching environment are growing in number as educators are becoming more familiar with them and learning to adapt them for their specific purposes.

For the most part, the authors of these various articles on technology and education view the impact of technology in classrooms positively although they are not blind to the possible pitfalls that also exist and should be taken into account. For example, in regards to instructional games, educators need to be aware of the potential rewards and drawbacks to these programs. Instructors need to thoughtfully assess both the "educational and motivational" values of games as learning tools (Roblyer, year, p. 99). This need to carefully consider the many ways and possible implications, both positive and negative, of integrating technology into education is an important step in the process towards effectively accessing the wealth of information and resources available. Instructors need to begin developing their own ideas of how technology fits into their vision of teaching. They need to learn the concepts and issues that exist and then decide how to integrate technology to enhance and perhaps even revolutionize some of their teaching practices.

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