

THE IMPACT OF EDUCATIONAL NETWORKING IN THE EDUCATIONAL SETTING

By

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ABSTRACT

Society's reliance on technology today has created a demand for more effective ways of communication unlike any before. The need to communicate has made its way from the home to the business world and into the educational setting. This article discusses the historical journey that has landed communication in the classroom. Scholars such as Piaget and Papert help us understand how technology practices in methodology and pedagogy naturally allow for the emergence of new views. This article provides evidence of resources that help both educators and students in the primary grades to fully integrate technology in the everyday setting. The goal of this article is to help educators understand the longitudinal progression that technology has taken in order to become prevalent in the classroom. By understanding how educational networking can enhance learning can help to ignite a passion for learning.

Keywords: Constructionism, Constructivism, Educational Networking.

INTRODUCTION

A means for communication and networking, to a variable extent, has been at the forefront of western existence. Hailed as one of the most important institutions of its day (John, 1995), the United States Postal Service was the revolutionary consequence to the need for communication between early settlements and colonies that cultivated the nation in 1775. In 1844, the commercialization for the electric telegraph became the next monumental mark in history, than the telephone in 1876. The various methods of communication in modern day are largely enabled by a networking technology evolution such as electronic mail and video conferencing thus enabling a fast and efficient means for human communication.

The idea of having the capability to communicate through new found technologies was a means to an evolutionary cultural shift. The ways in which society viewed the world has forever changed. Educational scholars such as Piaget, Papert, Jacobson and Levin constructed new ideas about theories of learning through new lenses. This article will discuss how the impact of educational networking has become a vehicle for learning through a constructionist framework by today's technological standards.

The Scholars

To put this paper into context, we must begin by understanding how Piaget and Papert's work laid the foundation to a systemic methodological framework. Piaget believed that in order for children to learn it was necessary for them to construct knowledge through conceptual and intrinsic means. This prefaced the theory of constructivism. Constructivism helps learners to create their own knowledge based on previous and newly acquired conceptions. Papert's (1991 & 1999) work enhanced this idea by adding the component of contextualized attainment of knowledge through tangible constructs of knowledge. The result from this was the theory of constructionism. The author likes to think of it as adding an "S" to the other person's word in the game of Scrabble. One person constructs a word and another receives points for that word. Here, Piaget created the idea of constructivism. Another person then proceeds to add an "S" to the already formulated word making it plural and thus receives points for the entire word. Papert took constructivism and added the physical component to the idea. This is not to say that Papert was not ingenious in his ideas and research or that his ideas were not original in their methods.

Educational Networking

Educational Networking is communication that is used for educational purposes. According to Jacobson and Levin (1993), significant progress is being made to create a computer network infrastructure to support and serve education. This was not always the case however, teachers have historically been inventive with any materials and media they was available to them. In an article written for the New York Times in 1989, a professor from Vanderbilt University came up with the idea of utilizing telephones and answering machines to increased communication between teachers and parents. Professor Jerold P. Bouch of Peabody College of Vanderbilt University, developed a system that allowed teachers to record information about classroom activities and homework on an answering machine so they were then able to call the machine at their own convenience and listen to the message. If they chose to they also had the opportunity to respond and leave a message for the teacher.

The rationale for this idea was the fact that there were more single parents in the workforce and therefore caused difficulty in the communication with the child's teacher. In addition to the teacher leaving messages on answering machines, a computer system was set up that allowed teachers to input information into a computer then the computer would call the homes of the students to relay messages to parents. It appeared that this project was successful in the two school that participated in the project based on feedback provided to administration. Parents felt as though they were now able to "really keep up and know what's going on [in the classroom]" (New York Times, 1989). It was however, pointed out that if there was no one at home to receive the call from the computer a message could not be given. The last line in the story read, "Now, if only a way can be found to get the machines to talk to each other" (New York Times, 1989). The author believes this line to be the most important one line in the article because it foreshadows future communication.

Although at this point in history, interaction with technology was not necessarily utilized by students but with teachers and parents instead. Students from these schools may however, been impacted by these situations but little

research has been done to support this. The fact was, in order to truly affect students, technology needed to be more accessible to everyone. In the early 1990's various resources were being used for network mediation such as electronic mail (e-mail), electronic bulletin board systems, and various information servers. Teachers and students now had more opportunities to communicate as well as access informational resources.

In 1993 Jacobsen and Levin presented a paper at the Tel-Ed '93 conference in Dallas Texas. In that paper they discussed network learning environments and hypertext and the idea of personal and shared knowledge spaces. They discussed the positive and negative effects of Web based technologies in the learning environment. One such environment was the myriad of information already on the World Wide Web. Teachers had so much access to resources however, the amount of time and effort to comb through information in order to deem quality was a taxing job. Jacobsen and Levin went on to state that, "merely providing flexible access to information using hypertextual tools is not sufficient to ensure substantive learning to occur" (Jacobson and Levin, 1993). For this reason a new lens was put on educational technology learning theories. Jacobsen and Levin developed a network hypertextual project-based learning server.

At the time this paper was written the development was in its infancy. The idea was to contain a large knowledge base of science education projects, science curriculum units, science questions which were to be coded in terms of dimensions such as underlying science principles and themes, age and grade levels, instructional tips, needed materials/supplies, duration, and various other resources (Jacobson & Levin, 1993). Emulating Pappert's (1999) idea of constructionism, this server was to allow students to construct their own knowledge based on the filtered resources provided in this server. Johnson and Levin added that the project-based learning server was, "intended to be shared knowledge space that is structured in ways to help support enhance student learning of complex knowledge as students are involved with wide range of authentic project oriented learning activities" (Jacobson & Levin, 1993).

Today the idea of a project-based learning server is still in effect. Educators still have to deal with issues of combing through resources provided by the World Wide Web. Information is readily available and school systems are set up to utilize information. Some information is provided to teachers through means of curriculum by other educators and sold to school districts. The problem with these types of curriculum is that they are limited to materials that are formulated to fit the needs of individual students. On the other hand however, many free open source programs are available for teachers to customize. Entire websites are built to support teachers and students.

Children and Technology

MaMaMedia is one such website that is interactive and allows kids to discover by doing. Children gain technological fluency to expand their minds through playful learning, exciting visuals and characters they can relate to in this virtual environment. This is the very foundation of constructionism. According to the website worldwideworkshop.org, the mission of the foundation is to "develop open-source applications of social media technology and game production, to enhance learning, innovation, entrepreneurship, and an understanding of the world in economically-disadvantaged and technologically-underserved communities"(Harel, 2010).

In a recent Research Colloquium at the University of Texas Austin, Harel (2010), the director and founder of MaMaMedia, spoke about helping to impact students at a young age in order for them to compete and prosper in our high-tech global economy. According to Harel (2010), "We must start young and provide all children with ample opportunities to become proficient and fluent contemporary learners with technology" (Harel, 2010). She was interested in creating a more technologically literate society. Harel also discussed the ground breaking World Wide Workshop Foundation's Globaloria where students have the opportunity to "make games and simulations in a virtual design studio that's embedded in a social learning system and fully integrated into school curriculum" (Harel, 2010). Research is currently being done both quantitatively and qualitatively to assess the full impact of this teaching and learning innovation.

Conclusion

By understanding how communication has been so prevalent in our society's past, we can see how naturally networking can be placed in the educational setting with the prosper of success. Research developed by top scholars such as Piaget and Papert only indicates the necessity to allow for hands-on learning through self produced products is of the most important. The desire to create more opportunities or an educational networking framework has increased over the years to the use of telephones, e-mails, and the World Wide Web. In today's world the World Wide Web has become part of the very fabric of our society's existence. In order to fully impact the world of educational technology and networking we need to develop more opportunities for student learning and provide access to viable resources.

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ABOUT THE AUTHOR

Melissa Lozano was graduated in the year 2005 with Bachelor's degree in Interdisciplinary Studies. She became certified in grades 4th -8th grade in all subject areas. Upon graduating, she began teaching 7th & 8th grade science in the El Paso Independent School District. She received her Master's Degree-Instructional Specialist in Science Education in 2007 and began teaching the Middle School Science Methods course (MSED 4311) at the UTEP where she implements a rigorous problem-based learning curriculum while focusing on the goals laid out by the Texas Higher Education Coordinating Board. 2009 She began coordinating the Master Teacher Academies at UTEP under the guidance of the grant's Principal Investigator Dr. Brian Giza. She works to ensure the success of the program through detailed organization of the program's data and statistics. She is also in charge of coordinating integrated workshops for the program's participants and in the near future will be admitting clearance for participants to take the TExMaT. She is currently pursuing a Doctoral Degree in UTEP's College of Education Teaching, Learning and Culture Program focusing her study on STEM education.