

Running Head: TECHNOLOGY VISION

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Technology Vision: Online Learning Management Systems

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Advance Effective Models E-Learn

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A Trend

Corey Feldman (1971) is quoted saying, “you have to stay updated on trends, social things and pop culture, you need to stay with the times and keep evolving.”

Feldman’s statement speaks to the countless trends we see in our society and how society is influenced by these trends. The business and science world, define a trend as a pattern, gradual change, an average, or a general tendency to move in a certain direction.

(Businessdictionary.com, 2016) In the social sciences, a trend is determined when an activity is participated in by a society as a whole for a long or short period.

(Reference.com, 2016) Trends can have many varying meanings across a wide spectrum of fields. In the field of technology, a trend can be as meaningless as a silly cat on social media, or as interesting as a surprise announcement of a new groundbreaking technology.

(Thurston, 2016) Generally, everywhere we look, we can likely identify ever-changing trends that affect what we do and how we do things. Trends can develop from the clothes we wear, food we eat, books we read, news we consume, social media we use, social issues we concern our self with, and global issues we choose to spotlight.

The games our children play and how they play them continue to change based on current trends. Currently, Pokémon Go, one of the biggest and wildly popular mobile games in U.S history is increasingly consuming cellular data of millions of smartphone users. (Robbie, 2016) With Pokémon Go’s evolution from the popular card game version of the early 2000’s, Pokémon Go is called the new vividly popular smart phone game that has the potential to change the health of children by encouraging play and movement outside. (Bodkin, 2016) Not only are children buying into the trendy game, but businesses are as well. In a Washington post article, Hayley Tsukayama, reported that

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business stores are buying sponsorship to attract Pokémon Go players, who are eager to catch the game's virtual characters. (Tsukayama, 2016) Many big businesses like McDonald are following this trend in hopes of improving profits and increasing share prices. Whether Pokémon Go will decrease U.S. childhood obesity and improve the stock price of big business are questions that will only be answered with time. (Kunz, 2016) However, like many trends, the popular game may likely fade once a new virtual reality or technology game is developed.

Technology affects many aspects of our lives on a daily basis. The effects of technology have not bypassed the trends we see today. Moore's Law suggests that technology becomes twice as faster every eighteen months. (Schaller, 1997) The advancement of technology has increased the speed in which our computers process data along with the speed in which the trends around us develop and end. Within our society, the advancement of the Internet and social media has provided connection and access to a greater number of people than ever before. For many Americans, social media increasingly consume a high percentage of the day and affect a majority of news and information received. (Sweney, 2016) Facebook and Twitter are two giant social media platforms that have led the charge of social media and shortened trends. These two giants on a daily basis have dozens of trending topics that attracted millions of visitors to their sites. However, although millions of people are attracted to the sites' trending tweet or post, the trend is likely to last less than a day or two. This increased attraction and shortened lifespan of social media trends, in general, parallel the use of technology and life span of technology in the classroom. Over the years, we have heard and seen many trendy technologies in the classroom come and go. Many of these technologies share

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similar characteristics, in that they have captured the attention of millions of people and with varying degrees of life-spanned.

Educational Technology

To identify and ultimately understand trends of technology in the classroom, it is important to define the term Educational Technology (ET). The term ET has seen varying uses and has gone through numerous revisions as technology and the use of technology in the classroom have changed. Within the context of a K-12 education setting, ET is generally defined as the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. (Reiser, 2007) This definition is useful because it prescribes broader terms to identify educational environments that fit the definition of ET.

Early Educational Technology

Throughout history, technology and education have been linked together, from centuries ago when tools were developed to carve figures on rocks to improve documentation of important items, to current times using Web 2.0 tools to communicate across geographical borders. (Purdue.edu, 2016) For hundreds of years technology has been a catalyst to the advancements in education. Thomas Edison's invention of the light bulb might not be directly linked to advancement in education at first glance. However, light in the classroom was an early technology that changed the way teachers instructed and students learned. A technology as simple as the light bulb allowed teachers, like 1915 English Teacher, Cornelia Carhart, to live true to the notion that seeing is believing. With light in the classroom, teachers like Cornelia were able to instruct longer. Ultimately, allowing students to learn at any given time and learn more. (White, 1984)

Chronology of Educational Technology Trends

Personal Computer

Since the invention of carving tools and the light bulb, education has been impacted by other notable technologies such as the radio, overhead projector, videotape, printer, photocopier, and scantron machine. (Purdue.edu, 2016) To select a technology that has drastically changed, many educators could effectively argue that the personal computer (PC) takes the prize. Much of what education is today is shaped by the personal computer. The first commercial computer was developed and sold by IBM following the Cold War in 1955. However, schools would wait until 1981 to adopt the first PC developed by IBM. Like many technologies, the PC was used for educational drills to prepare soldiers for battle. The PC gained traction in K-12 classrooms in 1983 with the introduction of the teacher-friendly Apple II PC by Macintosh. By 1986, 25% of the high school in the United State used PCs in the classroom. As the World Wide Web began to garner millions of users to create an interconnected world, use of PCs in the classroom grew further than most could have imagined. (Csulb.edu, 2008)

Today, a computer is a basic feature found in the average U.S. classroom. A device that was once too expensive, slow, and hard to maneuver, is now affordable, fast, and able to fit inside a pocket or small bag. The PC has altered much of what our educator and students are able to do in the classroom. (Cuban, 1993) Over the years, much attention has been placed on students and students' access to PCs. Educators and policy makers have worked to ensure that the average student has access to a PC by closing what is called the digital divide. The digital divide is described as the gap between those who have and do not have access to computers and the Internet. Over the

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years, the advancement of and access to PC in the classroom has narrowed the digital divide. (Skaletsky, 2016) Today, the PC is an essential tool that facilitates learning in dynamic and innovative ways in a classroom.

CRS & Smart Boards

The PC realized great use in the classroom and is arguable one of the most impactful technologies used in education. However, not all educational technologies have realized the same level of success, given the amount of attention and forecasted impact they had. In particular, the clicker and smart board are two types of educational technologies that garnered great attention early on. However, the argument can be made the both technologies failed to live up to the impact many educators speculated they would have.

The craze of the classroom response system (CRS) and clicker dates back to 2006. Educators across the country held high hopes the new CRS technology and clicker could provide dynamic and innovative ways for students to learn in the classroom. The idea behind the CRS was that students could provide immediate digital responses to questions by using a digital handheld device called a clicker. With more immediate responses from an entire class, as teacher in theory could provide students with immediate feedback to improve learning. (Suchman, 2006) Ultimately, CRS and the clicker were forecasted to radically change and improve learning. (BeDourgh, 2008) However, later studies showed that no significant differences in achievement were found between students that used clickers and students did not. Many educators would argue that the clicker was a wasted expense. Today, it is rare that you will find a clicker in being used in a classroom. (Patterson, Kilpatrick & Woebkenberg, 2010) Ira David Socol may have best

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contextualized the lackluster impact of the clickers in the classroom when he stated that “idea of wasting money on a device no more sophisticated pedagogically than raising your hand drives me nuts.” (Bruff, 2008)

For years, teachers have used the traditional blackboard and chalk to display texts to students in a classroom. The first interactive board was developed in the early 1990’s and became widely popular in the early 2000’s. An interactive board is computer-based touch-screen and digital projector that displays images that can be manipulated with a finger or a device called a stylist. The interactive board took schools by storm with the promise to increase student engagement, promote collaboration, provide flexibility, and promote an enhanced educational environment. The interactive board was advertised to provide teachers with the aforementioned benefits while being easy to use. (Cox, 2014)

Investment in interactive board technology has been strikingly high not only in the U.S. but in other countries across the globe as well. The price of a smart board can range from \$700 with a projector to more than \$4,000. (Weber, 2010) To put these numbers in perspective, a school with 30 classes could spend \$77,000 for the interactive board alone. This price does not include installation of the devices, training for teachers, and computers to use the boards. Many of the investments in interactive technology are due to the plan to integrate technology in the classroom and new national learning standards. (Somyürek, 2009) With high investment, one could argue the interactive board has not live up to its high cost.

It is not uncommon to hear a teacher or administrator refer to an interactive board as a glorified white board. While the interactive board affords teachers countless functions that could enhance the classroom, teachers tend to use the boards for simple

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writing functions that could be carried out on a normal whiteboard. Educators have argued that due to technological difficulties and steep learning curve to use certain interactive board, teachers tend to use the limit functions interactive board provide. It is also not unlike for teacher to grow frustrated and discontinue using the interactive board. Bill Ferriter (2010) documents the frustration of an elementary school with her interactive board in his article, “Why I Hate Interactive Whiteboards.” The main teacher in Ferriter’s article describes what led her to throwing out her interactive board after a year filled with frustration.

Vision: All In One Learning Management System

The history of technology in education, as highlighted by two sets of polarizing technologies, shows that many technologies have come and gone. Similar to the trends discussed earlier, educational technologies generate the attention of many people and at times fade away with lackluster results. However, like the PC and the impact the PC has had in the classroom, there is move currently a movement occurring that may be the precursor to a systematic change education and ET. This movement is one that will take our education system as we see it today and dynamically change it to a full interactive online environment.

Broadly speaking, the two major functions of education are to transmit the culture, values and lessons of the past to the current generation; and to prepare our children for the world in which they will live. Preparing children for the world in which they will live is becoming more difficult than ever. (Molnar, 1997) Currently we are in the midst of change all around us. The world our student live in is becoming more competitive as it is becoming digitally connected and capable. The power of the Internet

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is stronger than it has ever been with millions of applications currently developed and countless others being developed everyday. Likewise, the curriculum used to support the learning our students need to be 21st century adults continues to make digital competency and knowledge of technology key areas of focus. (Porter, 2011) In recent years, the assessments our students are required to take that were once paper-based are now in digital formats that test more than their knowledge of general content. Web applications and learning management systems such as Google Apps and Microsoft 365, afford schools with cost-free options to move learning online.

These aforementioned events are no coincidence. Our students are gradually being moved to an educational environment that is online and digital. Education as a whole is being moved from paper-based, in physical classrooms with doors and windows, to online, in digital classrooms without windows or boundaries. Businesses have picked up on these trends as well and are making acquisitions to maintain a key position in a future digital education market. In 2016, PowerSchool purchased Haiku Learning. This acquisition is significant because PowerSchool is one of the largest education services companies with operations in over 60 countries serving 57 million users. (Edsurge, 2010) Haiku Learning, claim more than 3 million users with its online-based learning management and classroom collaboration solutions. Haiku's online solutions allow teachers to create websites, upload and share content, carry out lessons, grade assignments and deliver assessments. (Henry, 2016) PowerSchool has also acquired TIENET, an online service for Individualized Education Plan (IEP) services. Other notable PowerSchool moves include; acquisitions of InfoSnap, an online tool that streamlines parent service in

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schools; and Interactive Achievement, an assessment developer. (Wan, 2015 & Wan 2016)

The business moves by PowerSchool in acquiring key companies that specialize in online solutions related learning management, collaboration, web applications, grading, education plans, and parent services, speak to the trajectory of education towards online education. The future of our school is online in all facets of teaching and learning. To further this claim, while current K-12 standards increase the importance of college readiness, colleges and universities are increasing online courses as undergraduate enrollment fall. (Smith, 2015) If this trend continues, our students are likely to find more options in online college courses in which they need to be prepared to succeed in.

Future Of Education

Going All-In-One

I believe the future of education will be an all-in-one online learning environment where lesson planning, lesson delivery, assessment, and communication between stakeholders inside and outside of the school are carried out via an online learning management system. Given this future, I would propose to redesign a school that is equipped with classrooms that are completely online. This vision includes students and teachers using services like PowerSchool and Haiku with devices at all times to remain connected to online content. Given the technological skills required to compete in this global economy, along with the movement to more online classes in universities and colleges, this plan will benefit and prepare students to succeed.

Needs Analysis

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Before carrying out this all-in-one online redesign project, it will be important to carry out a needs analysis of the environment to develop and identify key information to support the development of an effective plan. (Brown & Green, 2015) The needs analysis will provide information on what the organization truly needs and wants. (Horton, 2011) An assessment of the current instructional design is important to determine areas of strength and weakness to support the technology shift. Without the right instructional design, the technology implementation will like fail quickly. (Horton, 2011) Other areas to focus on to determine an effective plan will be

Stakeholder Strategy

To ensure that this plan is successful, go faith effort should be taken to ensure the interests of all stakeholders such as parents, students, community members, teachers, and administrators are incorporated into the plan. (Horton, 2011) Implementing an all-in-one online environment moves education away from a traditional format that most people are likely more familiar and comfortable with. Therefore, it is important to make all stakeholders aware of what online learning is and how it will enhance the educational learning environment and therefore improve student achievement.

Leadership Strategy

Leadership style and values will be a key component to successfully redesigning a school to an all-in-one online environment. This process will require a leader to manage the emotions, apprehension, attitudes that may arise from stakeholders for and against an all-in-one online model. Therefore, the ideal leadership style to maintain to successfully carry out a redesign project such as this is, transformational leadership. A transformational leadership styles will be needed to support stakeholders in identifying

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needed change, creating a vision for change, and executing the plan for change.

(Northhouse, 2015)

Economic Analysis

The forecasted expenses to implement this plan will include student devices, teachers devices, annual membership of an all-in-one learning management services, curriculum consultants, additional technology staff, and yearly training for teachers. A budget is presented in *Appendix I* projects the expenses to implement the all-in-one online learning program. Devices and network capacity are two important areas that have great economic implication with a redesign such as the one present. To ensure that students and staff are connected to the Internet at all times to effectively teach and learn, a robust network infrastructure is key. Equally important to have a robust network infrastructure is training teachers to effective instruction in an online environment. Majority of the expenses for this plan will be attributed to developing a robust network infrastructure and training teachers to effective instruction.

Conclusion

Once the plan is implemented, pre, formative and summative evaluation will be key mechanisms to determine the effectiveness of the all-in-one online learning program. Pre assessments will be given to students at the beginning of the school year to determine a baseline for future reference. Formative assessments will be conducted during quarterly and mid-year marked to gauge students' performance the effectiveness of the program. The result of the formative assessments will determine whether or that changes need to be made to improve the program. During the end of the school year, summative assessments will be conducted to determine the overall effectiveness of the first of the program.

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Likewise, pre and post surveys will be administered to students, teachers and parent to gain qualitative feedback. Qualitative data will be used when analyzing the student data to derive deeper meaning and possible themes. (Creswell, 2013)

The history of ET has taught use the various technologies have had great impact on education, while others have not. Additionally, ET tends to follow trends that fade over time. The PC has withstood the test of time and has impact educational beyond what anyone could imagine. The future of ET is online with all-in-one programs that provide service related to lesson planning, instruction delivery, assessments, and stakeholders communication services. A successfully implemented all-in-one program is one that not only educates students in the new digital world they will live in but also outlast the next trend.

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Appendix I: Projected Three-Year Budget

Items	Year 1	Year 2	Year 3
Computers	\$ 95,000.00	\$ 4,750.00	\$ 4,750.00
Tablets	\$ 19,900.00	\$ 995.00	\$ 995.00
Network	\$100,000.00	\$ 5,000.00	\$ 5,000.00
Teacher Training	\$ 20,000.00	\$ 15,000.00	\$ 10,000.00
Additional Technical Staff (2)	\$100,000.00	\$102,000.00	\$104,040.00
Software	\$ 20,000.00	\$ 1,000.00	\$ 1,000.00
Learning Management License	\$ 19,000.00	\$19,380.00	\$19,767.60
Online Applications	\$ 38,000.00	\$38,760.00	\$39,535.20
Other Services	\$ 20,000.00	\$ 10,000.00	\$ 5,000.00
Misc Expense	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Total	\$436,900.00	\$201,885.00	\$195,087.80

Catergory	Count
Number of Students	380
Number of Teachers	40
Number of Administrators	7
Number of Support Staff	30
Total	457

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