The Use of Technological Inventions in Classrooms

Posted on May 4, 2018

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Introduction and Background

Before one ventures into the various aspects that relate to the specific rules and regulations that surround the use of technology in classrooms, it is imperative that one appreciates that there are major differences in the various schools pertaining to educational technology. In most cases, students who attend high minority schools do not have the funds or equivalents to access technology as do some privately funded schools. As many as 85% of schools have computers, but the average ratio is 24:1 of students to computers. Such statistics are five times the ratio that the U.S. Department of Education suggests.

Another aspect to consider is the requirement to use computers, which is seen in 10^{th} to 12^{th} graders for school and college papers. As such, they are required to use laptops and computers at school to write and learn scholarly papers and resources. In one early research, it was identified that Hispanics and blacks were more likely to use and access computers daily as opposed to Asian and white students. Moreover, about 50% of students aged 13-17 had access to computers to learn math. All previously conducted research has, as a whole, generally pointed toward the use of educational technology in classrooms to bring about more effective results for students. Yet, some technological projects are in the process of recording the positives that such amalgamations have on skill-solving and critical-thinking abilities among students.

One can expect that with the use of technological inventions in biology or art classes, there will be better levels of student motivation, increased chances of students' collaborating, and an improvement in academic outcomes. However, a few aspects look at the more complex motives of technological amalgamations in daily lives; overall, the negatives lie far behind the positives of educational technology uses.

In the 1980s, the personal computer was made available. It was International Business Machines (IBM) that introduced the use of personal computers. Additionally, the Plato computer was introduced as part of the educational market. Schools did not yet have access to the Internet, but computers were used to complete reports, assignments, and other aspects of their work. Shortly after, one could identify CD-ROMs and their use in educational environments as well. It was the very first time that students could store and record content. The Internet was added to educational systems in the 1990s,

and it was not as fast as one may imagine. Today, there are many different versions of what one can define as the 'ideal classroom.' With YouTube's invention in 2004, there were drastic changes and improvements in the way that it was used as an effective tool in classroom learning. Teachers were also allowed to share and view free videos that was highly beneficial in classroom projects. Another important addition is the iClicker, which allows teachers to poll students during lessons. The mid-2000-2010 era was when technology was added to the classroom budget. From 2007 to 2010, iPads were introduced. They were the first ever Wi-Fi-enabled devices that classrooms fully trusted as learning tools. By 2015, other tablets were also added based on their operating systems and types of devices. Low-cost applications in online stores allow teachers to use these additions regularly. In 2017, virtual reality dominated classroom learning experiences. Devices such as Google Cardboard VR allow students to study objects in 3 dimensions. The last two decades have changed the outlook towards technology in education. The role that teachers play has become highly facilitative and supportive in nature. Students are now able to learn and make use of a multitude of resources as they desire.

Educational Policy and Implications

Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge Report to the Nation on Technology and Education, U.S. Department of Education (1996) is one of the primary texts that will be used in the educational policy report as follows. The text focuses on the *Technology Literacy Challenge* that was created upon entering the 21st century. The primary objectives of the text relate to encompassing technology in many aspects within classrooms. Key points related to how:

- Teachers in the United States were required to support students. and train them to enable them to learn computers.
- Teachers and classrooms in general are encouraged to have the most modern computers, which will be multimedia in nature, in their classrooms.
- All these classrooms will be connected to the 'information superhighway.'.
- Lined resources and software are to be an essential part of the curriculum.

As the text focuses on key policies in 1996, one ought to also assess other acts introduced in America. For instance, the Telecommunications Act of 1996, in some aspects, promoted the use of technology and some form of Ethernet services in a few classrooms in the U.S.

Furthermore, the Telecommunications Act of 1996 was the biggest addition to public policies in around 62 years. Despite the law targeting business communication aspects, it had a great potential to change the way that people lived, and learned in schools then. Essentially, the Telecommunications Act of 1996 affects the way that video services and broadcast facilities are provided to schools. Moreover, the FCC has also played a role in creating fair values in the new era of competition. There was information in implementing the law, and the changes were seen in many aspects of

communication and video services. The U.S. board also covered aspects related to wireless and wired telecommunication devices including telephones, faxes, and pagers. Other products, including modems and computers, were included as well. Moreover, there was equipment that related to the use of services. The FCC is truly responsible for enforcing the Communications Act. The Act was signed by Bill Clinton.

It is seen in Section 708- National Education Technology Funding Corporation that there was an abridgment of the educational and technological gaps. A relevance to NPBEA is seen in the way that it endorses and campaigns for PSEL. New Professional Standards for Educational Leadership (PSEL) were seen as part of NPBEA's initiatives to improve and encourage improvements in standards. Today, different standards relate to the 3-year process that changed the entire educational landscape. A great deal of research was dated 1998-2008 and looked at the gaps that existed before the specified timeframe. There has been some relevance to the 1990s as part of the issues of that time were present because of the lack of communication that was improved with the American incorporation of changes in the laws and policies of the time. The national technology plans of the time looked at how communities, states, and schools applied technology in the 90s.

Similar applications are found in Pease Elementary School in San Antonio, Texas where students were encouraged to improve their lives with the use of technology. It was also seen how students were surprised when testing tubes and air pumps could find the carbon dioxide levels in the air.

The current policy is used because it is relevant to the changing requirements of the current generation. I plan to work in a highly facilitated environment where technology is used to improve student outcomes. Moreover, one can see how school principals have become highly aware of the importance of accountability in the school. Also, the American public has become highly aware of the movement that is common in schools, the. federal government, and students. Also, with the addition of the "No Child Left Behind Act- NCLB," policymaking groups were looking at the development of accountability in students. NCLB was also introduced in 2002, and in this the level of accountability and patents were studied. The current federal, state, and local school accountability measures as well as policy initiatives that call for improved leadership have placed increasing demands on principals.

There was a report in 1987 related to the National Commission on Excellence in Educational Administration that highlighted the challenges that leaders proposed in terms of educational programs. Moreover, there is also a level of awareness that comes with such educational leadership programs. Policies that aim to improve communication and require there to be wireless and wired communication were important in the late 90s. Such policies relate to my level of attention to being a team builder. As part of the education system, it is important that I make full use of my prior experience. Moreover, community support is also an important aspect as it is part of raising the voice for education. This holds relevance in today's schools because, for years, there was very little relevance to such aspects. For example, NPBEA is already known for 21 domains and has also made the Interstate School Leaders Licensure Consortium. It is highly necessary that schools have specific laws and policies that cater to the improvement of students. Keeping these aspects in mind, it is also

important to acknowledge that many of the policies change every other year or so in education. For instance, in 2003-2005, there were additions to the CCSO with the formation of the Interstate Consortium on School Leadership. As part of my current and future work, I find it imperative to focus on building knowledge and abilities to promote the success of students by encouraging the various departments within the education system and promoting the staff. Moreover, there needs to be input from the local community. Another aspect to consider is that the district leader needs to have the ability and knowledge to promote the success of students in any instructional program.

All new policies are likely to be influenced by historical educational leadership theories and ideas from the past. Prior to the development of policies that supported the introduction of wired and wireless technological aspects in educational environments, demands were underway for schools to focus on better results in students' education. As mentioned above, there were calls for accountability in all these institutes. It was from historical improvements that institutes that just had 'high-status quotients' were no longer acceptable. Even then, leadership was important as it was considered something that conveyed the element of dynamicity. In most cases, the school head and principal are considered the leader, as seen in the 1990s policy reforms. There are loose adaptations taken from older times where the leader is the one who proposes changes in the aims and mission values of the school. Educational leadership in the past was replaced by the term 'administration' in school settings. However, leadership does not represent the full picture in this case. Of course, there are additions by the state, policymakers ministry, and state divisions.

The work that the school adds in is only the final step of the chain. Historical relevance identified that the school rests at the forefront of the chain and requires much supervision, including an entire revolution in the educational industry. One of the most impacting policies in school accountability is "A Nation at Risk," which was seen in 1983; this reform changed how public schools were dealt with. Finally, there was a superintendent highlighting values. It is safe to say that the early 1980s were the golden years of educational policy changes. At this time, schools began to make radical shifts in how they conducted their curriculum lessons. Finally, one can infer that the 1980s set the tone for the 1990s, and the late 20.th century was one that highlighted the roles that chief executive officers played; moreover, the roles that advisors played in a professional board setting, managers, and communicators to the public have gained a great deal of attention.

Today, the use of technology in education is not a secret. In K-12 and higher education, there has been some sense of debate regarding its use. However, computers are essential in education as they prompt people to learn and become empowered by the useful information there is. Computers are an essential part of our schools today, allowing us to reevaluate teaching methods in all trueness. It was in 1998 that the United States introduced 5.8 million computers nationwide. Moreover, the Office of Technology Assessment was a major part of the movement. There are many pros of having computer-assisted classrooms where tutors can provide the best for the students. Up till now, teachers have been students' primary source of enlightenment, but they have taken a more administrative role today. With computers introduced in classrooms, every student can make use of multimedia tools that include videos and image storage that allow them to cover missed lessons or encapsulate

previous work.

Despite the many pros of computers as part of educational systems, amalgamating them in schools has many cons. For example, due to the lack of interaction, teaching has become very mechanical. There still needs to be an account of students' emotions. With the exponential increase in computer usage and its amalgamation in almost all walks of life, human life has lost one of its basic attributes: emotion. One can also argue that computers do not work well for students who like to participate in a collaborative environment. Computers can also make us look more stupid than smart.

Education is a window that works through our curiosity and imagination and can take students' lives to an enhanced level of creativity. It is undeniably true that education helps students achieve enormous goals, and there needs to be a connection between technology and classrooms. The pros far outweigh the cons that come along with the policy to associate technology in classrooms via promoting communication as per the 1996 act.

Looking at the changes and improvements in ELCC standards, there are many ramifications. Without much doubt, the world is changing. There is data that supports that superintendents are leaving their current roles as part of the educational society. These trends are combined with the incompetency that is prevalent today. With the drastic changes, there is a natural requirement for superintendents to promote leadership of key members at the school. Such improvement in ideal policies and reforms will not magically solve all the problems but only add some positive aspects to the current state of education. All introductions of ELCC standards relate to benchmarks and guideposts that allow people to improve their usage of research bases.

One can easily state that it is not technology alone but people who have evolved in the past twenty years. The world has, in either case, become more nuanced and sophisticated. People ought to learn skills to respond quickly to the fast-changing environments in schools. The world has become more complex; moreover, people have started to value cognitive and communication skills in educational leaders. Technology is important in shaping our lives and how well children are educated. A great deal of balance exists in tending to public concerns that include accountability and skills of the future. Till the early to mid-20th century, the internet was part of science fiction only. The usage was limited to government leaders; however, educational leaders and governmental members helped to build its foundation in educational technology. Also, in the mid-1990s, some reports related to creating recommendations related to technological additions. K-12 schools were connected to the 'information superhighway' in the true sense shortly after. The report that was published in 1997, named "PCAST Panel on Educational Technology," urged a high level of support for technology to promote universal usage. The internet slowly emerged, and there was the advent of the internet in educational institutes. Online systems such as MOODLE allow for today's most positive technology usage in education. Other examples include 'TURNITIN' as the most beneficial K-12 plagiarism-checking and report-submitting website.

A copy of the revised educational policy has been attached at the end of the paper. Teachers,

students, and staff are likely to be impacted by the proposed changes in the educational policy. With the introduction of one tablet per pupil, how teachers deal with students' attention in school will drastically shift from traditional classrooms. Incorporating computers for grading 'multiple choice questions' in real-time will also affect how parents keep track of their children's progress at school. All things being said and considered, Google and Apple increased their market by providing for schools in 2016 alone. A study was published by the British Educational Suppliers Association, where around 1 million tablets were supplied for educational purposes. There is a worldwide market that exists in America as well. There are many benefits and changes in how the staff communicates at school. In many cases, teachers and students make use of online platforms and tablet systems, mostly iOS or Android, to promote educational platforms. Some aspects include iTunes U, which also allows teachers and staff to create virtual courses. Moreover, some aspects include iBook textbook options. Google Play has also managed to bridge the gap. The entire educational philosophy is likely to take a drastic change for the better.

With the amalgamation of technology in all forms of communicational departments, there are likely to be differences in the way that verbal and written communication is dealt with. For instance, principals today make full use of online applications such as WhatsApp, Gmail, Facebook Messenger, and so forth. While it allows colleagues to become closer and tightly knit as a whole, there are some setbacks. For instance, verbal communication has taken a backseat as opposed to the time before the 1990s. All community discussions will now tend to be completed online, mostly through emails and other Facebook communication options that aim to overpower all others. The school board will aim to maintain verbal communication as the key period of discussion regarding any topic. The positives of such policies include quick and ineffective levels of communication. Updates regarding any trouble or query can be cleared in a mere matter of minutes, without the need for individual meetings or conversations with the principal for tiny matters.

The school will bear many budget implications before addition to high school. The primary target group will include grades 9-12. Considering that there are 120 students per grade on average, the total number of students includes 480. As the policy is to be introduced, all students will be required to have a Samsung Galaxy Tab 3 Lite (it has a retail price close to $120). The initial budget for the tablets alone will amount to $58,000. The tablet is chosen as it is economically feasible for all those involved. Computers will be installed (a total of 150 in number), and their purpose is to change how papers and computers are. Considering that an average range computer costs $400, the total amount is $60,000. There are other costs that surely include equipment, but staff to tend to any errors in the running of the machines is also required. The initial costs will easily amount to $200,000, and new workers ought to be added to the IT team in the particular school. The sky-high costs of promoting such aspects are detectable. The students, teachers, and invigilators must be trained in using such computers daily.

Many aspects relate to the finance models and how students will be equipped. Other questions relate to how to buy tablets. Moreover, there are also likely to be e-safety policies. Implementation plans are also part of the process. Teachers need to be prepared for tablets as well. There needs to be a small

start; moreover, the selection of applications needs to be highly monitored. In all cases, professional development is key. The classroom organization is likely to change. Students must limit their usage of tablets as utilities only and not as tools to record audio clips or take pictures at every step.

Implementation of the new school policy- Detailed Timeline: Training Implementation and Management

Phase Tasks, Milestones and/or Deliverables	Start Date	End Date	Responsible Role
Implement changes in technology use at school.	08/23/18	08/28/18	Superintendent and Principal
Prepare for Roll-Out	09/01/18	09/30/18	Staff at the school
Training periods for 1 hour a day during school hours.	10/01/18	10/31/18	Staff at the school
Register Participants in the new program	11/15/18	12/31/18	Staff and superintendents
Evaluate Training (Levels 1-3) at intervals	02/01/19	03/31/19	Teachers, Staff, Superintendents, and the Principal

The following is the revised educational policy that is suggested based on all previous occurrences.

- *Two elements will be central to the policy: focusing on educational performances and school choice.*
- *Parents will be highly active in choosing what is best for their children.*
- *A moderation of "No Child Left Behind" will be applied. This will include establishing very high standards of education that has measurable goals.*
- *As per the legislation, there needs to be standardized testing methods that will be conducted via computerized systems. These systems will allow the students to access results in real-time. Sufficient funding is to be allocated for the addition of such systems to the school.*
- *Innovation and improved achievements are the goals of K-12 education. The American government will reinvest in promoting these performance standards by implementing reforms that will focu on the betterment of teachers, students, and parents.*
- *Online learning is a requirement as virtual classrooms are the best kind in terms of felicity of timings and learning concepts.*