

Study into how technology improves student learning outcomes



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In order for Americans to boom in this new planetary economic system, it is indispensable that we use every available resource available to us and our kids. We must be capable of non merely viing in this planetary occupation market, but we must hold the critical thought accomplishments and proficient cognition to put the new model on what this planetary market should look like. Therefore, utilizing engineering in the schoolroom environment is indispensable in order to better pupils larning results.

Schools and universities were the holders of all human cognition. Great minds congregated and grew within universities in order to alter the universe. If institutional instruction does non accommodate to the information age of computing machines, smartphones, iPads and the cyberspace, it will decease off. There is an on-going argument as to the effectivity of engineering usage for the results of pupil acquisition. There are several benefits to utilizing engineering in the schoolroom, and it needs to be a necessity that instructors begin to integrate the usage of these engineerings into their course of study.

At the Presidential Announcement Speech in Springfield, Illinois on February 02, 2007, President Barack Obama said, “ Let us be the coevals that reshapes our economic system to vie in the digital age. Let ‘ s set high criterions for our schools and give them the resources they need to win. Let ‘ s enroll a new ground forces of instructors, and give them better wage and more support in exchange for more answerability. Let ‘ s do college more low-cost, and allow ‘ s invest in scientific research, and allow ‘ s put down broadband lines through the bosom of interior metropoliss and rural towns all across America

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Released in February 2010, the U. S. Census Bureau took a study on the figure of families in the United States that use the cyberspace. The statistic was from the old twelvemonth (2009) and the per centum of families with cyberspace usage at place was 68. 7 % . Americans love the engineering that exists today and evidently they have embraced it with unfastened weaponries. Virtually all Americans under age 60 say they have used a computing machine (92 %) and most of them have used the Internet (75 %) or have sent an e-mail message (67 %) at some point in their lives harmonizing to a study performed by the National Public Radio (“ Survey Shows Widespread Enthusiasm for High Technology ” , hypertext transfer protocol: //www. npr. org)

With this in head, engineering has to go a major portion of mundane school because it is already a portion of mundane life. Harmonizing to the CDW-G 2010 21st-Century Classroom Report, pupils and instructors have certain outlooks when it comes to the usage of engineering.

“ It would assist me to hold a better entree to video/audio entering capablenesss, to heighten and convey deepness to lessons for pupils with differing acquisition manners. ” (Braselman 15)

“ Students could make public merchandises of their cognition and acquisition and happen resources from other pupils. ” (Braselman 15)

“ It would learn me how to seek for information more expeditiously. It would enable better visuals and artworks to understand the stuff. ” (Braselman 15)

“ It would supply us with a greater ability to entree and go around all class-related information and would unclutter up a batch of assignment confusion. Not to advert that I merely happen utilizing engineering easier than handwritten spreadsheets or notebooks. ” (Braselman 15)

Students and instructors expect more out of engineering and are able to utilize and implement engineering because the usage of computing machines, smartphones and the cyberspace are a portion of their mundane life.

There have been many surveies performed that attempt to turn to the issue of utilizing engineering in the schoolroom compared to the traditional schoolroom, concentrating on pupil larning results. Many have focused on the classs that pupils received at the terminal of the class (Schulman & A ; Sims, 1999, Smeaton & A ; Keogh, 1999, Sener & A ; Stover, 2000, Wade, 1999, Lin & A ; Davidson, 1994, Navarro & A ; Shoemaker, 1999) , saying no addition to a 5 % addition with utilizing engineering during the class as opposed to the traditional method. One survey performed a unsighted trial determination, “ a^|average mark for the on-line category was 5 points (5 %) higher than for the on campus (traditional) category. ” (Fallah & A ; Ubell, 2000) .

Harmonizing to the U. S. Department of Defense about 10 old ages ago, persons have a short-run keeping degree of approximately 20 % of what they hear, 40 % of what they see and hear, and 75 % of what they see, hear, and do. The survey besides states that persons complete classs with multimedia in tierce of the clip as those having traditional direction, and

make competence degrees of up to 50 % higher. (as cited by Oblinger, 1991, p. 4) .

In another elaborate survey of IT larning behaviours in 1991, Jensen and Sandlin ' s survey (as cited by Oblinger) , there are several other benefits of larning through the usage of multimedia:

“ It mirrors the manner in which the homo head thinks, learns, and remembers by traveling easy from words to images to sound, halting along the manner for reading, analysis, and in-depth geographic expedition. ”

“ The combination of media elements enables trainees to larn more spontaneously and of course, utilizing whatever centripetal manners they prefer. ”

“ Uniting media elements with well-designed, synergistic exercisings enables scholars to widen their experience to detect on their ain. ”

“ Many multimedia plans are designed to let scholars to hesitate, subdivision, or halt for farther geographic expedition (synergistic qualities that encourage non-linear thought) . ”

“ By uniting words with images and sound, multimedia plans enable people with changing degrees of literacy and math accomplishments to larn by utilizing sight, hearing, and touch. Evidence suggests that utilizing multimedia sections as context for trainees significantly AIDSs in reading comprehension. ”

“ Instructional engineering helps people learn to problem-solve and work in squads, which support the development of interpersonal accomplishments. ”

“ With a multimedia plan as helper, trainers can supply more individualised attending to trainees as they need it most. ”

“ Teachers have time to concentrate on activities that demand engagement while pupils are able to learn on their own. ” (Oblinger, 1991)

Even though the survey targets trainers and trainees, proposing that these surveys were done in a concern or industry scene, the same rules would still use in an academic scene between instructors and pupils.

In reappraisal of research conducted between 1993 and 2000 on the effectivity of educational package, Murphy (2001) found that there was a positive consequence between the usage of educational package merchandises and pupil accomplishment in mathematics and reading. Other reappraisals (Kulik & A ; Kulik, 1991 ; Kulik, 1994 ; Fletcher-Flinn & A ; Gravatt, 1995 ; Ryan, 1991) besides show a positive accomplishment and effectivity when utilizing computer-based direction, particularly pupils with particular reading demands.

In June 1996, a study was published by the U. S. Department of Education that describes many ways in which computing machine engineering has enhanced public presentation in countries of reading, authorship, and arithmetic. “ In a decade-long series of surveys, pupils in categories that use CAI

(computer-aided direction) outperformed their equals on standardised trials of basic accomplishments accomplishment by 30 per centum on norm. ” This study besides states, “ Video and audio engineering (enhance) pupils ‘ ability to retrieve and understand what they see and hear. . . multimedia significantly enhances pupils ‘ callback of basic facts, every bit good as their apprehension of complex systems. . . [and] engineering has helped pupils get the hang the traditional basic accomplishments of reading, authorship, and arithmetic. . “

Published in 1989, a study found that “ [Chapter 1 pupils] who worked with the ESC

[Education Systems Corporation] package (experimental groups) demonstrated significantly greater additions in achievement both in reading and in mathematics than those Chapter 1 pupils who did non hold entree to computing machine research labs (command groups) . ” These additions were recorded at 2nd and 3rd class degrees. The research workers stated that the “ consequences coincide with legion other research surveies on the effectivity of computing machine assisted direction and accomplishment. . . . ”

The U. S. Department of Education, in its Getting America ‘ s Students Ready for the 21st

Century, stated that “ Numerous surveies have demonstrated that engineering is peculiarly valuable in bettering pupil authorship, ” and cited beginnings for that determination, including work of the Apple Classrooms of Tomorrow undertaking.

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Useful in the survey of history, the of all time turning Internet archives of historical paperss, images, maps, and other resources enable instructors to supplement text editions and print resources

and let pupils to prosecute expanded waies in researching the topic.

I have found few paperss turn toing links between engineering and overall

public presentation steps such as grade point norm (GPA) , Scholastic Assessment Test

(SAT) scores, and subsequent college public presentation. However, Charles Grimm, in his

doctorial thesis entitled “ The Effect of Technology-Rich School Environments on

Academic Achievement and Attitudes of Urban School Students, ” did describe higher

academic accomplishment and “ higher attitude-toward-school tonss ” among the pupils in

the technology-rich schools.

The Software Publishers Association issued a study sum uping grounds on the

impacts of educational engineering. The research was conducted by an independent

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adviser, Interactive Educational Systems Design, Inc. (IESD) .

The SPA/IESD study found:

Technology is doing a important positive impact in instruction. Important findings in these surveies include:

A· Educational engineering has demonstrated a important positive consequence on accomplishment. Positive effects have been found for all major capable countries, in preschool through higher instruction, and for both regular instruction and particular needs pupils. Evidence suggests that synergistic picture is particularly effectual when the accomplishments and constructs to be learned have a ocular constituent and when the package incorporates a research-based instructional design.

A· Educational engineering has been found to hold positive effects on pupil attitudes toward larning and on pupil self-concept. Students felt more successful in school, were motivated to larn and had increased ego assurance and self-pride when utilizing computer-based direction. This was peculiarly true when the engineering allowed scholars to command their ain acquisition.

A· The degree of effectivity of educational engineering is influenced by the specific pupil population, the package design, the instructor ' s function, how the pupils are grouped, and the degree of pupil entree to the engineering.

Research does propose that educational impacts are existent where engineering is used good. Offering at least some support for this observation

is a 1997 study of U. S. instructors conducted by Wirthlin International for Tenth Planet, an educational package company.

The study found that 76 per centum of respondents answered “ yes ” to the inquiry “ Has your usage of computing machine engineering improved pupil accomplishment? ” Seventeen per centum answered “ no ” and 7 per centum “ do n’t cognize - refused to reply. ” A related inquiry inquiring the respondents to “ rate Computer Technology on how good it has improved instruction and acquisition of nucleus course of study in your schoolroom ” found merely 16 per centum giving a class of “ A, ” 42 per centum “ B, ” 30 per centum “ C, ” 6 per centum “ D, ” and 4 per centum “ F ” (with 3 per centum “ do n’t cognize - refused to reply ”). The responses on this inquiry were lower for the Los Angeles sample (although the border of mistake was larger than for the full national sample) . Merely 5 per centum of the Los Angeles instructors gave a class of “ A, ” 41 per centum “ B, ” 36 per centum “ C, ” 9 per centum “ D, ” and 5 per centum “ F ” (with 5 per centum in the “ do n’t cognize - refused to reply ” class) . The favorite option for bettering the class, selected by 49 per centum of the national sample, was “ accessibility/more computing machines in the schoolroom, ” with “ more quality package ” coming in second at 25 per centum. A clear bulk of the national sample (75 per centum) answered “ yes ” to the inquiry “ Would you like to be able to increase the sum of clip you spend utilizing the computing machine to assist you present and learn new constructs in nucleus course of study like math and literacy? ” There was strong support (82 per centum) for “ more educationally sound package in order to efficaciously incorporate computing machines into nucleus course of study. ”

In order for instructors to acquire positive consequences with utilizing any signifier of new engineering, the signifier of engineering has to be used as a “ tool ” to help the instructor in making the acquisition environment. The engineering can non decently learn the pupil all by itself and without any specific way for its proper use. The instructor no longer has to stand up in forepart of the category and gives pupils merely facts, but alternatively the instructor is now a facilitator or manager. This opens the chance for more pupil oriented project-based coaction activities where the pupils can specify their ain ends, make their ain determinations and measure their advancement on the undertaking. Technology usage allows for pupils to utilize certain accomplishments that are non typical in lessons led by instructors.

Other advantages from pupils join forcesing on undertakings include non merely holding pupils work together to decide a common struggle but there was grounds that pupils were assisting each other in the usage of the engineering that was being used within the collaborative group. Technology based undertakings involve the demand to be able to utilize the many different facets of the package and/or engineering being used. In many instances, there will non be merely one pupil that will cognize how to utilize every characteristic of the engineering being used and instructors have reported that this is taking to many state of affairss where pupils are assisting each other because it provides them with pride and enjoyment and pupils are more willing to offer aid and take part (Government, 2003) .

An addition in motive and assurance in pupils are the most common effects reported by instructors when mentioning to the usage of new engineering within their schoolroom ' s (Government, 2003) .

“ The computing machine has been an authorising tool to the pupils. They have a voice and it ' s non in any manner secondary to anybody else ' s voice. It ' s an equal voice. So that ' s improbably positive. Motivation to utilize engineering is really high. ” — Elementary school instructor (Government, 2003) .

New engineering have non merely transformed the manner that instructors are able to learn but they have provided many chances for pupils with disablements every bit good. Universal Design for Learning (UDL) and Assistive Technologies (AT) have taken the chances that were brought by quickly germinating communicating engineering to make many flexible learning methods and course of study stuffs that can make diverse scholars and better pupil entree to the general instruction course of study (Rose & A ; Meyer, 2002) .

Although both Universal Design for Learning and Assistive Technologies rely on the usage of modern engineering to supply and better instruction for handicapped pupils, the existent engineering tools that are used have sites and mechanisms of usage. With Assistive Technology, modern engineering is employed at the degree of the single pupil to assist them overcome barriers in the course of study and life state of affairss. With Universal Design for Learning, modern engineering targets the course of study itself and is used

to make course of study and environments that lack traditional barriers to learn.

A usage of Assistive Technology is presently being used by the Clark Memorial Library at Shawnee State University. The library has introduced the Victor Reader Stream for pupils with limited vision, sightlessness, dyslexia or that are physically handicapped. Students with disablements are able to download and read text editions, read and navigate through complex recorded books, mention manuals and journal articles. The device has constitutional speech-to-text, voice entering capablenesss for notes and it can play music files and podcasts.

The Concerns (take this out)

Research shows that the challenge of assisting instructors and pupils achieve Information and Communication Technology (ICT) literacy, and the challenge of set uping models for measuring their accomplishments, is a batch less in schools functioning low economic, minority pupils (Becker, 2000b ; Becker & A ; Ravitz, 1997) . More than half (53 %) of instructors in public schools who have computing machines use them or the cyberspace for direction during category. But, in schools where pupils are from higher income households, 61 % of instructors with computing machines use them in category compared to 50 % of those learning in schools with low income pupils (Lenhart, Rainie & A ; Lewis, 2001) . The same survey showed that 87 % of kids use the cyberspace and besides found that 3 million still remain without any sort of internet entree.

Presentation attempts and grounds show that learning ICT literacy accomplishments (specifically those related to multimedia literacy in web, publication and picture production) can better the economic position of at-risk young person by giving them much needed marketable accomplishments (Lau & A ; Lazarus, 2002) .

Even with all of the positive attitudes, some people still seem to hold jobs with computing machines and the usage of new engineering. Some of the concerns are with possible dangers of pupils utilizing the cyberspace improperly. “ (31 %) of childs age 10-17 from families with computing machines (24 % of all childs 10-17) say they have seen a adult web site. ” (“ Survey Shows Widespread Enthusiasm for High Technology ” , hypertext transfer protocol: //www. npr. org) .

A possible downside with coaction was noticed by some instructors because some of the pupils seemed to acquire distracted with some of the small issues such as the type of fount, artworks and sound and they are paying small attending to the content of the undertakings (Government, 2003) .

As schools increase the usage of engineerings, the substructure to implement, support and decently utilize these engineerings becomes more relied upon by module and pupils. If instructors are working with an substructure that can non back up the work or instructions that they are seeking to supply, they will go defeated and use those defeats to non implement or seek to utilize any signifiers of engineerings within their functions as instructors. School territories and/or Universities will hold to supply physical support and keep their computing machine webs so that

pupils and instructors are being offered quality web connectivity which accesses pertinent web resources.

Some instructors feel as though they will hold to vie with the engineering that the pupils use at place. They feel like they have to vie with iPods, Playstations and personal computing machines. This can set a batch of force per unit area on the instructor because they feel as though they have to reconstitute their whole course of study and maestro a whole new manner of learning and they will besides necessitate to larn how to utilize and implement new package (Goff, 2007) .

But many school instructors say that engineering brings excess loads with it. One excess load is how, at times, the engineering being used is undependable. Elizabeth Baker, school instructor, states that, “ There ‘ s ever this atrocious thing when you have planned that lesson on the IWB (white board) and something goes incorrect because there is something incorrect with the system. You either have to be highly organized and program two lessons - 1 on paper and one on the white board - or you have to depend on all your resourcefulness as a instructor to draw something out of your chapeau. ”

In a survey performed by Gilbert Valdez (“ Critical Issue: A Catalyst for Teaching and Learning in the Classroom. “ , 2005) , student perceptual experience was that instructors had deficient cognition of the usage of engineering and the schools inordinate filtrating systems prevented them from accessing important sites, chiefly those incorporating medical subjects.

Students besides stated that the quality of their assignments were hapless and uninspiring.

There are many different points of positions when it comes to the statement that schools use excessively much engineering. Some people attack engineering usage in schools for psychological, moral and physical grounds. However, most critics attack engineering usage because they believe that it provides minimum educational qualities and benefits. Three mentions that have received a batch of attending as being critical toward engineering usage in schools are, *The Flickering Mind* (Oppenheimer, 2003) , *Oversold and underused: Computers in the schoolroom* (Cuban, 2001) and *Fool ' s gold: A critical expression at computing machines in childhood* (Cordes & A ; Miller, 2000) .

The chief unfavorable judgment in all of these books, and other critical articles every bit good, is that computing machines are non as cost effectual as other signifiers of educational intercessions. They mention that the computing machines and package become disused really rapidly every bit good as the on-going costs of upgrading both hardware and package. Some critics indicate that they believe that many hardware and package companies intentionally design merchandises to go disused more rapidly which would necessitate updates that pedagogues must purchase. It is their belief that educational engineering is excessively much in its babyhood and non yet dependable plenty for usage by most pupils (Valdez, 2005) .

There are many factors that affect engineering execution, particularly in urban schools (Means, Penuel, & A ; Padilla, 2001, p. 197) , including the followers:

Lack of engineering substructure.

Lack of proficient support.

Teacher uncomfortableness with engineering.

Lack of high-quality digital content.

The restraints of academic agendas and departmental constructions.

Lack of pupil engineering accomplishments.

Low outlooks of pupils.

Accountability force per unit areas.

Some critics such as Kirkpatrick and Cuban (1998) indicate that engineering equipment requires extended support constructions that require territories to take money off from basic outgos for other and better utilizations in the schoolroom. They believe this money should be invested in the humanistic disciplines, scientific discipline research labs, stores, and anything else that involves more hands-on ways of larning. Technology literacy, some believe, is extremely overblown in its importance and that people who need to utilize engineering will larn by utilizing undertaking applications that involve “ existent ” work.

The unfavorable judgment is particularly strong for computing machine usage by younger pupils. Some critics believe that with the exclusions of assistive engineering for pupils with particular demands, pupils below the 3rd class should not utilize much, if any, engineering. Other critics are concerned that engineering reduces socialisation chances. Some parents are concerned about the consequence that kids are deriving so much of their universe cognition from a practical, instead than the existent, universe. Other critics are concerned that the sexual and violent content accessible on the Internet challenges or prevents character instruction necessary for development of moral citizens (Rifkin, 2000) .

Decision

Technology has changed the manner we communicate with each every bit good as the manner we function as a society. The cyberspace has replaced many of the things that people used to make on a regular footing such as utilizing electronic mail and societal media web sites like Facebook and Twitter to maintain in contact with household and friends alternatively of composing letters to each other. Reading newspapers online and online screening of telecasting shows and films have gained popularity over the old ages. Photograph albums have been replaced by difficult thrusts that are full of exposures that barely of all time acquire looked at. Parents used to kick that you ne'er called them but now they want you to be their Facebook friend. Computers used to be 1000s of dollars and they took up an full room and now they are more low-cost and are no bigger than a box of cereal. Internet, media and progresss in engineering have transformed every facet of our lives except for instruction.

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In order for positive pupil learning results, from the information and cited plants taken from this paper, it is imperative that instructors implement new engineering into their course of study while invariably supplying feedback to the pupils and by being involved and prosecuting with the pupils. There are two factors that are a must in order to supply the most effectual usage of engineering to pupils in the schoolroom. You must hold instructors willing and desiring to take part in the usage of new engineering, and instructors need to be first-class at teacher readying and they must possess the accomplishments and cognition necessary to implement the engineering right.