

A STUDY ON THE EFFECTIVENESS OF NEW TECHNOLOGIES IN IMPROVING THE READING SKILLS OF STUDENTS

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Abstract

The number of students in American schools who are unable to read at grade level has been constant at 10% over the past 20 years. The explanation for this is thought to be that the majority of them had a developmental problem with reading comprehension, but their reading potential was normal but underutilized as a result of low desire, insufficient stimulation, anxiety, negativism, and emotional blockage. As a result, it has addressed the contentious topic of using technology-assisted reading programs to improve learners' reading skills. Several arguments are heard in support of or against computer-based reading programs, with many claiming the fact of reading on screen will not enhance reading on paper and that screen reading is not a "natural method" of reading. To improve understanding of descriptive scientific literature, this approach encourages self-explanation, initial knowledge, and reading methods. Students that adopted the iSTART program fared better when compared to their counterparts in terms of self-explanation and summary, according to the results. In skills tasks with multiple choice questions, strategic knowledge was also a factor: students with efficient knowledge of strategies being effective enough in improving the accuracy while resolving the concerned issues while the students with less knowledge of strategies improved their accuracy when answering text-based questions. With younger children, another application, ITSS, was utilized to facilitate activities focused on recognizing important sections and keywords for in-text and classifying the related information in an appropriate manner (Meyer et al., 2011; Wijekumar et al., 2012, 2013, 2017). Students adopting the ITSS program showed potential improvement towards their text abilities when compared with their classmates in control group, indicating the program had a positive impact.

Keywords: *Impact, ITSS, Start, Knowledge etc.*

1. Introduction:

For students reading is a basic cognitive capability that leads to taking part successfully during the phases of adult life (Hulme & Snowling, 2011). As a result, students who show difficulties in-text skills and with special educational needs as well as learning disabilities (LD), are more prone to school failure and increased life risk (Woolley, 2011). In reality reading skills is an advanced ability that involves cognitive such as metacognitive skills and working memory with the aspects of knowledge as well as linguistic that is grammatical and vocabulary knowledge. Not only these two but also reading skills involve skills with higher-order, the generation of inferences is significantly indicated in this case (Oakhill et al., 2003; De Beni and Palladino, 2000; Channa et al., 2015).

Due to the spread of technology, the frequent use of digitalized reading devices (laptops and computers, tablet devices, and e-books) are utilized in different domains of texting skills in schools, homes, in daily life, and at work, which involves the potential support for transforming the traditional reading skills and learning skills. The major impact of the interfacing the technological aspects on capabilities of reading when compared with printed texts were compared by certain writers in youngsters with normal development (Mangen et al., 2013; Singer and Alexander, 2017; Delgado et al., 2018). Children and teenagers demonstrated poor skill performance towards texts presented on the screens compared to printed texts but still preferred digitalized texts over the printed texts (Singer & Alexander, 2017; Mangen et al., 2013; Delgado et al., 2018). Only a few studies have looked at the differences between printed texts and digital devices in children with learning disabilities and found no appropriate differences, implying the utility of compensatory digitalized tools among children with disabilities of such children can be a feasible choice towards traditional texts of writing styles for assisting the academic and work performance (Chen, 2009; Gonzalez, 2014; Krieger, 2017). The findings of a meta-analysis regarding the utility of digitalized tools and learning settings towards increasing educated perception among

middle school pupils corroborate this conclusion, demonstrating that technology can help children improve their reading abilities (Moran et al., 2008).

In the worldwide literature on computerized reading skills talents, training systems, and several methods are targeted. On the other hand, activities boosting coherent (e.g. vocabulary) and self-recognizing (e.g., identifying relevant sections in a text, skills monitoring, and the use of strategies) components of reading abilities have been included in numerous research. A previous study has been analyzed where the participants were of all ages with different educational levels, with the bulk of them being in middle and high school, to come to a conclusion in this regard. Most of the participants performed better in their assigned tasks when compared with the other groups and helped in maintaining their improvements that further resulted in a positive outcome. The potential improvement in the skills after seeking effective training from various training programs with effective results even during the follow-up tasks. Numerous studies with teenagers and young adults employed the iSTART program (Magliano et al., 2005; McNamara et al., 2006).

2. Aims and Objectives

2.1 Aims and objectives of the study:

The present study aims for studying effectiveness of new technologies in improving the reading skills of college students and the considered aim can be achieved through the below-mentioned objectives.

- To evaluate the aspects of advanced techniques for improving the reading skills of college students
- To assess the possible outcomes of integrating the new technologies for improving the reading skills of college students
- To determine the effectiveness of integrating new technologies for improving the reading skills of college students

2.2 Research Questions

According to the study's research objectives, the present study focuses on implicating the effectiveness of new technologies in improving the reading skills of college students. The research will help in answering certain questions which circuitously helps in attaining the objectives of the study. The following are the research questions that will be answered through the course of this research study.

- What are the major aspects of improving reading skills among college students?
- What is the contribution of advanced techniques for improving the reading skills of college students?
- How is the integration of new technologies effective in improving the reading skills of college students?
- What are the possible outcomes of integrating the new technologies for improving the reading skills of college students?
- How the effectiveness of integrating new technologies is determined for improving the reading skills of college students?

3. Literature review

The way for integrating skills for becoming a successful, strategic, and motivated reader, a pupil must master a complicated activity in which many things must go well. Students must be able to detect letters and sounds, combine sounds into syllables and words, understand the meanings of words on their own as well as in sentences and paragraphs, and comprehend meanings of texts of all sorts and genres (Adams, 1990). To sustain motivation and efficiency, students must read with appropriate fluency (O'Connor et al., 2010). They must comprehend the role of word components, or morphology, in the meaning of words (Bowers et al., 2010). They must also possess effective vocabulary along with prior knowledge for reading texts in a variety of genres as well as appropriate metacognitive abilities to derive meaning from text (Elleman et al., 2009; Block and Duffy, 2008; Pressley, 2003). Students will have a difficult time learning to read if any of these steps go awry (Snow et al., 1998). Phonemic awareness, phonics, reading abilities, vocabulary, and fluency are five components that the National Reading Panel recognized as being at the heart of every early reading strategy (National Institute of Child Health and Human Development, 2000). This collection is intended to serve as a resource for teachers related to reading skills in initial grades, as well as students in general. All children require certain abilities, and good readers are likely to acquire them quickly in elementary school. However, the tale is very different for difficult readers. For many reasons, students may struggle to learn to read proficiently. One student may be able to distinguish every letter and sound but has difficulty combining them into words. Another person may be able to read words but not understand them or the phrases in which they occur. Another may be deficient in the language required to grasp materials.

Struggling readers should ideally get one-on-one tuition that is tailored to their specific needs. The readers who are in their learning phase in initial grades are considered as struggling readers, evolves one-on-one

tutoring which is highly helpful, especially if tutors employ organized, phonetic techniques (D'Agostino & Murphy, 2004; Elbaum et al., 2000; Slavin et al., 2011). Tutoring, on the other hand, is highly costly and may not be practical in a school with a big number of struggling readers. Use of technology as a remedy for the requirements of struggling readers has been advocated several times (Anderson-Inman & Horney, 2007; Boone & Higgins, 2007; Roblyer & Doering, 2013; Silver-Paculla & Fleischman, 2006; Stetter & Hughes, 2010). In principle, computers are capable of adapting to unique requirements of struggling readers, enhancing their known information and filling in the gaps. Most students find computers to be extremely motivating, and they can even imitate some of the characteristics of skilled human tutors (Kamil et al., 2000; Leu, 2000; Lever-Duffy & McDonald, 2008). These distinct settings may be used in programs which integrate computer-assisted instruction (CAI) with instructor teaching and cooperative learning. For many years, technological applications of various kinds have been touted as having the ability to improve learning, particularly for kids who are having difficulty learning to read (Roblyer and Doering, 2013).

Result Analysis

3.2 Technological integration in improving the reading skills among students

According to Bakwin and Bakwin (1972), the number of students in American schools who are unable to read at grade level has been constant at 10% over the past 20 years. The explanation for this is thought to be that the majority of them had a developmental problem with reading comprehension, but their reading potential was normal but underutilized as a result of low desire, insufficient stimulation, anxiety, negativism, and emotional blockage. As a result, it has addressed the contentious topic of using technology-assisted reading programs to improve learners' reading skills. Several arguments are heard in support of or against computer-based reading programs, with many claiming the fact of reading on screen will not enhance reading on paper and that screen reading is not a "natural method" of reading.

Pioneers named Atkinson and Suppes were the first person who integrated the employment of computer technology for improving their learning skills (Atkinson, 1968; Suppes & Morningstar, 1969). Since then, the utility of computer-related techniques among the schools has risen tremendously, and the related experts evolve the fact that this technique will continue (U.S. Department of Education, 1994). The effectiveness of the technology implicates the fun-loving environment within the classroom which will be effective in helping the students in learning abilities and move forward towards their achievement. Apart from this, some individuals rely on the fact that money spent on technology and time spent by pupils towards the utility of technology is considered to be waste. Various organizations tend to evaluate research regarding the techniques and learning skills and determined that it is important in improving student success and teacher learning, only during the condition of utilizing it effectively (President's Committee of Advisors on Science and Technology, 1997; Dede, 1998).

Teachers incorrectly view lack of reading abilities as misbehaving, being ill-mannered, or even dumb behavior patterns (Wilsenach, 2003). As many students who attend tertiary education are under-skilled and lack fundamental academic and other relevant abilities, many higher education institutions have advanced to technology-supported learning (Van Schalkwyk, 2002). Many educationalists continue to question the benefits of technology in promoting literacy skills, and as a result, learners and students who enter the educational system with a lack of reading skills and technical abilities are more likely to fail to meet educational goals (Weikle & Hadadian, 2003). As per the research, technology is not capable of curing or removing learning disabilities, but it aids students in attaining their full potential by utilizing strengths and allowing them to skip the regions of difficulty (Stanberry & Raskind, 2007). Assistive technology has been found to help some skills deficiencies like reading and spelling (Higgins & Raskind, 1997). In addition, the computer's huge storage and computing capacity make it ideal for classroom usage. It may offer the student instructions, request replies, provide feedback, and adjust his subsequent learning. Use of computers helps in assessing student's achievements and comparing them to previous results. One of the most significant parts of managing reading issues is selecting proper computer software. When looking for software to utilize, a set of basic prerequisites should be given to give readers the best chance of success. This type of program should cover all key areas of reading while also assisting the instructor with record keeping and administration.

Any successful model will expand vocabulary and help to recognize words better. This is necessary in order for the reader to recognize words more quickly and increase his capacity to communicate vocally and in writing. To increase reading speed, eye movement fluidity, fixation duration, and recognition span, several reading strategies should be taught. Spelling is an important component of written communication and a source of worry in schools and higher education, therefore it should be included in computer software like this.

3.3 Role of advanced technologies towards upgrading the reading skills among students

In the twenty-first century, the concerns for education are to find and develop tools that improve teaching and learning. New technology and shifts in student demographics have a big impact on higher education's developing landscape. Institutions are striving for providing support, meeting the requirements of

these various groups in order to help learners meet these rising demands. Learner demographics nowadays are dispersed across age groups, regions, fields of study, and learning preferences. To maximize educational success, these groups require specialized teaching methods. Today's education is not limited to the traditional classroom lecture (O'Connor et al., 2010). Adults' learning preferences vary owing to a variety of characteristics, including their comfort level with new technology, their attention span, and their capacity to multitask. Knowledge is becoming immensely more accessible as a result of new technology. Younger generations, who have grown up with digital media, are more open to innovative learning approaches since they were exposed towards sophisticated techniques earlier in their schooling, in elementary school.

In the United States, online education is gaining popularity, mainly in higher education sector. As per EduVenture, an independent research firm specializing in online education, over 90% of college and university students attended at least one online class in 2008. There are over 16 million pupils in this group. As a result of this phenomenon, online learning is now used in almost all fields. The popularity and acceptance of online education, on the other hand, varies by field. The desired learning environment, confirmation of teacher and student online authenticity, information accessibility, and instructional model are all factors that contribute to the discrepancy. The internet penetration rates of main disciplines are highest in business, liberal arts, and health professions. The Sloan Report: Staying the Course, Online Education in the United States (2008) examines developments in online education across a wide range of fields. During the same time period, another research done by EduVenture had similar results.

The popularity of online learning in various fields is influenced by a number of variables and those are:

- The availability of online classes
- preferences of learning
- pedagogical reasons.

Learning management systems today give proof of course conduct. In an online class, a properly established system can track student actions and participation. The abundance of data allows universities and colleges to connect student achievement with class components in order to create classes that are appropriate for each subject (Channa et al., 2015). Aside from the need for technologies that are appropriate for diverse generations of learners, distinct disciplines necessitate their own set of technology-assisted learning. Students of the future will be expected to adapt to new learning techniques and technology even more quickly and early.

3.4 Effectiveness of integrating new technologies for improving the reading skills among students

Student's and instructors' access to texts and resources is changing drastically as a result of technological developments. The number of devices that can display digital text has grown at an exponential rate since 2007 (Tablet Adoption Drives Ereader Sales by 400%, 2011). In November 2007, the Amazon Kindle, the first e-reader for gaining traction in market, sold out two days after its debut. As of June 2011, Amazon announced that Kindle books have outsold both hardcover and softcover books combined (The Coming of Age of Ebooks: Infographic, 2011). Meanwhile, the Apple iPad which was considered as the launch of touchscreen-related tablets with huge production, added application "iBooks" to the Apple iPad during April 2010, expanding users' options for accessing digital-text material (Apple Launches iPad 2, 2011). More than 15 million iPad 2 devices had been sold by the time it was introduced in March 2011, and by June 2011, that figure had risen to 27 million. Analysts predict that in 2014, 89.5 million tablets and e-readers will be sold throughout the world. Many teachers, administrators, academics, and policymakers feel that digital devices hold tremendous promise as instructional aids for literacy education as a result of these technological advancements. Many students' learning may be significantly improved by simple uses concerning existing e-reading technologies like adjusting the size of font on the screen, employing features of text-to-speech for enabling dual input of text, or utilizing the Internet for associating it with learning activities (Anderson & Horney, 2007). Researchers from around the world gathered at the annual International Conference on Computer in Education in 2011 to share ideas on the advanced utilization of e-reading techniques that ranges from the providence of personalized feedback through the work of artificial intelligence such as the development of animated avatars to the stimulation of critical thinking skills through association of computer-support in order to predict the interest of the students or frustration based on brain-waves data (ICCE, 2011). However, along with the potential of these advancements come difficulties that might worsen literacy challenges described in other papers in this collection, such as disparities in reading abilities across children of various socioeconomic backgrounds. For example, Nonie Lesaux emphasizes the necessity concerning the conceptual capabilities of higher level and knowledge for literacy, and she emphasizes the requirements for closing gaps in such areas by providing all students with enough opportunity to gain such information (Lesaux, 2012). However, modern e-technology may unintentionally increase such disparities. Parents, for example, are increasingly using techniques to give learning and reading opportunities to their children and the parents of this era are the fastest-growing segments of e-reading equipment purchasers. However, not all parents are capable of providing those chances for their children (Purcell, 2010). Tablet and e-reader ownership is on the rise, with sales doubling in the first six months of 2011 and then doubling again in the final month (Rainie, 2011). However, purchase patterns have implied rising

education-based differences in accessing the gap that persists even while purchasing patterns are broken down by income level. The consequent technology gap resembles the demographically based literacy-skills gap described in Sean Reardon, Rachel Valentino, and Kenneth Shores' article in this issue, raising the troubling possibility that new technologies for developing literacy skills will exacerbate problems for students from families with low income (Reardon et al., 2012). Even if policymakers and educators solve access to technology inequalities, experts warn that achievement gaps will increase unless kids are given enough opportunity to learn how to utilize technology to achieve a variety of objectives. Kids' improved access to technology in schools, libraries, and community technology centers is narrowing demographic differences in access to technology at home, but substantial gaps among capabilities of students for utilizing the techniques during persistence (Warschauer&Matuchniak, 2010). The kids who are capable of achieving high goals do not often utilize technology towards activities of interest such as subjects of research or associating online for producing new media but are prone for getting get adult assistance. The students who are low at achieving their goal often use it for social purposes, like talking or playing games with friends on social media, seeing pop-up ads, or browsing celebrity links. Such disparities in pupils' usage of technology do not only accomplish anything to close the gaps in knowledge but may instead widen them. When students require access to technology; they must learn the way of using it in strategic manner to improve their literacy abilities, particularly their conceptual and knowledge-based capacities, which are critical in subsequent literacy tasks. Susan Goldman describes the way of navigation for vast amounts of unfiltered information at different complexity levels and in different forms leading towards causing more difficulty for students who are already struggling for gaining strategic reading approaches and critical thinking skills in her article in this issue (Goldman, 2012).

The good news is that technology may help people overcome a variety of literacy issues. It's already being utilized in novel and promising ways to target the complete spectrum of abilities needed to improve student reading, both procedural and conceptual. That is, technology may be used for more than just practicing skills; it can also be used to learn the vocabulary and background information needed to become a competent reader. While technology isn't a cure-all for literacy issues, it may help. Its instruments, on the other hand, must be carefully incorporated inside cohesive, evidence-based educational programs if its potential is to be realized.

The present study will utilize a quantitative research approach as this will help in addressing the research objectives clearly. This type of research approach has been basically evolved for quantifying the collected data in the research study. In this type of research approach, numerical and statistical research approach has been utilized along with the implementation of the data collection that requires conduction of survey process for analyzing the results. This research approach has been mainly implemented for establishing a correlation among the different variables being used in the research study mainly involving the elements grouping, numbering, and their conversion into the measurable models. This research study will adopt a quantitative research approach as it aims for analyzing the effectiveness of new technologies in improving the reading skills of college students. This approach is explained in terms of social considerations which are represented from the participants' point of view.

Conclusion

The present study aims for analyzing the effectiveness of integrating new technologies to improve the reading skills among college students. The collected data will be analyzed for obtaining relevant results which will be obtained by using data analysis tools. Hence, the expected outcome of the study will be considered to fulfill the major objectives. The present study will determine the use of technologies for improving the readings skills evolving positive impact on the activities followed by the students and related professionals. The training programs will show efficacy among the students when implemented by the teachers to improve the learning skills in reading. The relevant issues and challenges faced by the students while adapting to the use of new technologies will be obtained which can be improved for increasing the learning efficacy among the students towards reading. A positive correlation will be obtained involving the use of new technologies and the efficacy of adopting those technologies by the students for improving their reading skills.

The present study has aimed for analyzing the effectiveness of integrating new technologies for improving the reading skills of college students. With the integration of new technologies in reading skills, some of the major limitations are involved in the present study. The learners are capable of creating their own knowledge by interacting within the environment and their knowledge entirely depends upon the existing knowledge of relevancy to the use of technologies. The use of technologies within the classrooms has been considered an important aspect in improving the reading skills of college students. Several tools and platforms have been developed for engaging the students via different media to interact with other individuals beyond the immediate reach of the learner (Pittman & Gaines, 2015). Hence, it becomes mandatory for the students to have effective knowledge of using such techniques in their reading skills. Lack of any knowledge regarding the appropriate use of advanced techniques in their reading skills may result in bringing a major gap between the effectiveness in improving the learning skills. Also, utilization of new techniques for improving the reading

skills among students requires well-structured infrastructure in the classroom for effective learning of the students. One of the major limitations in such cases involves the availability of limited resources, funds, and budgets for the development of building high-tech infrastructure for efficient learning within the classroom.

Another limitation involves the inadequate access to the use of technology which results in generating obstruction to effective professional development while deteriorating their effectiveness in adapting to improve their reading skills. It may further result in difficulty in increasing their level of integrating the technical aspects within the classrooms which will affect the learning skills among the students (Wilkerson et al., 2016). The lack of self-efficacy while adopting towards the learning efficiency with the integration of new technologies is another limitation involved in improving the reading skills among the students. The lack of self-efficacy may result in affecting the performance by having a major impact on the verbal persuasion in reading skills (Howardson & Behrend, 2015; Pan & Franklin, 2011). The lack of effective technology integration within the classrooms may evolve inefficiency in reaching the possible goals of improving the reading skills among the students without the important online technologies self-efficacy (Ozerbas & Erdogan, 2016).

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