

EWIAN ODANE SMIKLE

**"TO WHAT EXTENT
TECHNOLOGICAL ACTIVITIES
AND PROGRAMES CAN BE USED
TO ENHANCE THE LITERACY OF
SECONDARY STUDENTS"**

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This was a research done on technology being used to improve students' literacy, the limitations and the positives within the act of technology being used for literacy improvement.

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USED TO ENHANCE THE LITERACY OF SECONDARY STUDENTS.**

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MA INNOVATION IN LEARNING AND TEACHING

**This Dissertation is being submitted in partial fulfillment of the Requirement for the
Degree of MA Innovation in Teaching and Learning**

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Abstract

This dissertation is a secondary research which is aim to reveal ways in which students can improve their literacy level with the use of technological activities and programs. It tells how teachers can implement programs that will positively improve a child's academics. The research has detailed information showing the impacts that has proven to have worked for many teachers before. The research looks at certain limitations that will be faced by educators using technology for literacy improvement for students. Theories and methodologies are mentioned to better able give a better view of the benefits of technology within the classroom. This research express the importance that teachers keep abreast with the current innovations with technology so that they can always engage with their students and keep the classroom as active as possible, while students learn effectively at the same time. The research also speak of the issues that are faced by multiple countries as it relates to literacy rates and its impact to the economy and the country at large. Recommendation were given and suggestions made. The research shows in detailed how important technology is to improve students in this era literacy. Evidence are presented to prove its execution and reliability. All credit is given to researchers who work tiresome on their researches to help provide this research with quality and valid information. Credit to these individuals are given within the acknowledgment and reference pages.

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed.....Ewian Smikle..... (Candidate)

Date.....December 20, 2020.....

STATEMENT 1

This dissertation is being submitted in partial fulfillment of the requirements for the degree of MA SEN

Signed..... Ewian Smikle (candidate)

Date..... ..December 20, 2020.....

STATEMENT 2

This dissertation is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

Signed..... Ewian Smikle (candidate)

Date..... December 20, 2020.....

STATEMENT 3

I hereby give consent for my dissertation, if accepted, to be made available for photocopying and for inter- library loan, and for the title and summary to be made available to outside organisations.

Signed..... Ewian Smikle (candidate)

Date..... December 20, 2020.....

Acknowledgement

I would like to use this forum to thank every individual that has played a part in the compilation. I would love to thank the creator for strength and health throughout the beginning and the end of this dissertation. My lecturer who has provided the necessary resources and information needed for me to fully understand what is required of me for this research and her timely responses. My wife who played the role of support while I work and studying at the same time. Due to the fact that this research is a secondary research I sincerely thank the researchers who have made the necessary researches prior to mine so that I can read your content and have a better understanding of this topic and so that I could add more quality to what was there already. Other stake holders involved I thank you for your invaluable contribution.

Chapter One

INTRODUCTION

Recently in Jamaica there has been a growing interest in how ways and means can be implemented to assist in the development of student's literacy. There has been many concerns with the lack of literacy among students within the secondary education area and research has been done to see what can be done to solve those issues. Literacy is a human right and not a privilege. It is imperative that as human beings we are afforded the opportunity to read and write. Literacy provides an avenue for both social and human development and acts as a tool for personal empowerment. According to the Jamaica observer dated Tuesday September 9, 2014 "Disturbingly, more than 774 million of the world's adults are unable to read. Of this number nearly two-thirds are women. It is estimated that worldwide 123 million children lack the skills to be literate."

According to the International Society for Technology in Education achieving technology literacy helps students function in the world they live in. Not only is technology necessary in education and work arenas, it also helps students become better decision makers. In the current world we are living in if students aren't able to read, comprehend and understand what they read, then they won't be able to effectively understand any other area. In understanding technology a child must be able to understand what they are reading. The Wisconsin Department of Public Instruction defines information technology literacy as the ability for an individual,

working independently or with others, to use tools, resources, processes, and systems responsibly to access and evaluate information in any medium, and to use that information to solve problems, communicate clearly and make informed decisions.

Problem Statement

Multiple research has been done to find out what are the causes and the source of these students lacking in literacy. Theory of Literacy Development presents literacy growth as a usual process that begins in a young child's home. (Holdway's 1979). One of the many researches that was conducted by a psychosocial assessment that was conducted shows close to 6,000 students who have failed the Grade Four Literacy Test four times have determined that their ability to learn is being hampered by environmental and other social factors (Tyrone Reid 2012). The then Minister of Education within Jamaica Ronald Thwaites stated that all stakeholders including parents and the community at large would have to join forces if the persistent maladies plaguing Jamaica's public-education system are to be remedied. There are a few attempts that has been made to try and address the issue of poor literacy. A program was implemented to cater for those who were not developing within the literacy level. The program was known as the Alternative Secondary Transition Education Programme (ASTEP). The program was designed to which is designed to provide an alternative instructional path for children who, after four sittings of the Grade Four Literacy Test, have not been certified literate and, therefore, will not transition immediately to secondary schools via the Grade Six Achievement Tests (

Now known as PEP). According to The Ministry of Education "The testing of students was to identify the learning readiness of students in order to customize lessons for them to address their individual learning needs," This shows that these students were not at the basic literacy level to read and understand specific academic resources, which resulted in them failing in understanding what is to be done in the classroom when given work specifically information technology. Several studies have investigated that there some teachers who are trying their best to develop the ability to use technology to increase literacy rates for students who are struggling. Researchers have identified that technology was not helping student's performance exponentially. Professor Michael Kamil from the University of Stanford postulated that "The important aspect, from my perspective, is that these were classroom programs that replaced about 10 percent of instructional time. What that means is that since there was no difference, the software programs were as good as the teacher." Professor Kamil suggested that due to the fact that there is an increase in new technology and a regular basis it gives the classroom a better chance to utilize them in the classroom to help struggling readers and writers. Few attempts were made by institutions to come up with ways in which they could improve these students' literacies using technology. Carnegie Mellon University and the University of Pittsburgh's did a research-based program which is called the Pearson's Quick Read, within this program they made attempts to use tools to improve students' literacy.

Purpose of the Study

The purpose of this thesis is to examine whether the intervention of the technological learning community can help develop the literacy level of students. As an educator, I have experienced many different students who have issues with literacy and due to this are unable to execute areas of computer studies/ information communication technology. It was something that was heart rendering to me, as it will be difficult for these students to fully function within society if they lack literacy. It is evident that the world is heading towards more and more innovation each day and it is imperative that students grasp every aspect of technology that will help them in a job or profession. This is where literacy plays a major role as they won't be able to utilize anything learned in computer studies if they lack the comprehension to understand that is being taught. With all of that, I have experienced students who have great potential, willingness to learn and apply content but they were unable to understand what was being taught in class. When evaluations were given within the form of written exams that's when I realized their lack of literacy was more serious than I had expected. It played a major part in how they expressed themselves through their sentence construction. These students were failing very badly and it wasn't because they showed no effort or because they were lazy; it was because they could not read. When information was written on the board and students were asked to read, you will hear them start the sentence then followed by silence or mispronunciations. With this experience, the motivation to research means and ways in which students such as these can learn through the means of technological extracurricular activities. The reason this approach was taken through the form of extracurricular activity was due to the fact that these students loved socialization and it's best to achieve this in an

environment which they feel comfortable in. Learning communities is described as “an intentionally developed community that exists to promote and maximize the individual and shared learning of its members. There is ongoing interaction, interplay, and collaboration among the community’s members as they strive for specified common learning goals” (Lenning, Hill, Saunders, Solan, & Stokes, 2013, p. 7).

Research Questions

The research was done to evaluate the effectiveness of technological intervention for students who are weak in literacy. The main thesis was, to what extent technological activities and programs can be used to improve the literacy of secondary students.

The following questions below were created:

- Can technological driven programs assist secondary students’ literacy level?
- What influence technological programs can have on the literacy of secondary students?
- In which way technological activities can be used to enhance secondary students’ literacy level?

CHAPTER 2

LITERATURE REVIEW

Advantage of Technological Implementation in the Classroom

First the perspective of the classroom must change to become learner centered.

Second, students and teachers must enter into a collaboration or partnership with technology in order to create a "community" that nurtures, encourages, and supports the learning process (Cognition and Technology Group at Vanderbilt, 1992). We have seen over the years where technology has effectively allow learning within the classroom to become more effective, from the resources teachers use to present a lesson to the students using their resources to present their work and activities.

According to Derek Rowntree (1979) educational technology is concerned with the design and evaluation of curricula and learning experiences and with the problems of implementing and renovating them. The introduction of technologically base activities have allowed the teachers within the classroom to better able to evaluated a students learning style and challenges. Whereas the use of technology have aided them in effectively handling these issues.

Educational technologists would not therefore consider the computer as just another piece of equipment. If educational technology is concerned with thinking carefully about teaching and learning, then a computer has a contribution to make irrespective

of its use as a means of implementation, for the design of computer based learning environments gives us a new perspective on the nature of teaching and learning and indeed on general educational objectives. O'Shea and Self (1983), p. 59. According to the University of Arden "technology in the classroom is an innovative way to use the computer to motivate your students to learn. Using electronic means, you can teach your students how to search and interpret information and how to use computers for various projects." The introduction of technology within the classroom as without a doubt enhance the learning of student drastically, whereas they will be able to develop and improve their weaknesses or challenges that they face in any academic or learning areas.

According to the George Lucas Educational Foundation publishing website Edutopia -"Integrating technology with face-to-face teacher time generally produces better academic outcomes than employing either technique alone." Blanton et al. (1997) found that children who participated in a technology rich afterschool program scored higher on traditional achievement tests in reading. They also achieved a higher level of knowledge and understanding for reading, the use of grammar, and computer knowledge than did their counterparts who were not part of the program.

All of this technology is meant to enhance the learning process and improve outcomes. Waterford Primary opened a computer lab and enrichment room. They provided the following data to the competition: Numeracy/Literacy and GSAT passes have all improved. Between 2009 and 2012 literacy increased from 58 per cent to 72.6 per cent; GSAT went from 47 per cent to 54 per cent and numeracy climbed

from 25 per cent to 42 per cent. (Jamaica Observer 2012). It shows the improvement of technology in specific areas especially literacy, the integration of technology in the classroom is imperative to the education system.

Constructivists believe “learning occurs when one constructs both mechanisms for learning and his or her own unique version of the knowledge, colored by background, experiences, and aptitudes” (Roblyer, 2006, p.37). Discovery learning is a constructivist learning theory that includes inquiry based integration strategies. Constructivists believe that all knowledge is constructed in an individual's mind by participating in certain experiences (Roblyer, 2006). These experiences would be experiences students will undertake during their time and interaction with technology.

How literacy and technology is collaboratively imperative to each other in this current era.

Means (2000) reiterated that computer based technology is only one element in effective early childhood literacy education. Increased comprehension, vocabulary, fluency, and achievement have been documented when young children interact with technology. As new literacies that include digital and media technologies evolve, preparing students to understand and adjust to these literacy demands is critical to current and future expectations for pleasure and work (International Reading Association, 2001; Leu, Mallette, Karchmer, & Kara-Soteriou, 2005). For instance, teachers may identify with past models of literacy that are paper and pencil bound;

however, new conceptions involve continually changing views of reading and writing, particularly with the advent of the Internet (Leu et al., 2004; Warschauer, 2006).

"The Ministry of Education recognizes the role that technology plays in education and training and has taken steps to ensure its integration in the teacher-learner interaction. Our literacy and numeracy programmes and activities make use of technology and tools to enrich aspects of the learning environment," (Grace McLean JIS) who is the chief education officer at the time. To improve the level of literacy in the current era in which we are which is technologically driven, it is important you use the aid of technology. Not to go with the time only but to better able allow areas of learning to be able to bring forth itself to students more effectively.

Jonassen (1996) indicated that, in his experience, children were comfortable using the computer to aid thinking. Computers are mind tools, as he suggested, quoting Simons (1993) as saying "mind tools foster constructive learning, in which learners construct their own knowledge rather than recall the knowledge of the teacher" (p. 11). Jamaica has been able to use the mind tool approach to teaching and learning. Schools that were involved in the 2020 project have been exposed to a classroom where they are encouraged to use computers as a thinking aid. This is evidenced by the results of the integrated software experiment, where it was reported that satisfactory learning gains occurred when software was used to teach. Hence, the evaluator indicated that the approach had the potential to initiate positive attitudinal changes in teachers and to improve literacy and numeracy acquisition in remedial classrooms.

How learning communities or extracurricular is effective in improvement a student's literacy level.

According to Kingsbridge Community College "Whatever level of understanding a teacher has, there are structures that can be used to begin embedding Collaborative Learning as a means for developing students' language capabilities to improve their reading and writing." Brozo and Simpson (2003) suggest that if learning is a social process; "we know what we know only when we reflect our knowledge in others" (Blumer 1969) then the argument naturally follows that literacy and literacy learning must also be a social process. Even when we read texts by ourselves, meaning is constructed because of the world that we inhabit and the interactions we have previously had with others. In lesson time, there are many ways that working collaboratively will benefit both the literacy of the students and their acquisition of subject knowledge.

Vygotsky (1962) examined how our social environments influence the learning process. He suggested that learning takes place through the interactions students have with their peers, teachers, and other experts. Teachers can create a learning environment that maximizes the learner's ability to interact with each other through discussion and collaboration. Vygotsky recognizes that learning always occurs and cannot be separated from a social context. Consequently, instructional strategies that promote the distribution of expert knowledge where students collaboratively work together to conduct research, share their results, and perform or produce a final

project, help to create a collaborative community of learners. Knowledge construction occurs within Vygotsky's (1962) social context that involves student-student and expert-student collaboration on real world problems or tasks that build on each person's language, skills, and experience shaped by each individual's culture" (Vygotsky, 1978, p. 102).

Technology can facilitate the cooperative nature of reading the same or related material. Electronic devices such as the Kindle, Nook, and iPad (i.e., the InKling application) allow members of a cooperative group to share with each other passages out of the books they are reading, highlight passages so others can note what one thought was important in the text material, and make notes for the other members of their group to read and respond to. Due to the fact these students were provided with tablets from the e-Learning programme "Tablets in Schools" they will be able to use the BYOD. Which is "Bring Your Own Device", they will be able to use their own devices to help develop their own area of weakness with supervision from the teacher. Within a club which allows students to feel comfortable and have fun while they are learning will definitely and undoubt increase their literacy, as the activities which will be given will gear toward literacy improvement.

Technology does not have to isolate and separate students. When used effectively, technology can bring students together in cooperative efforts and enhance student experiences. Accessing information through the internet can broaden the curriculum deepen students' learning. Instructional technology can remove geographical and communication barriers that limit learning. Technology can provide students with

immediate feedback. By enabling students to cooperate in learning to read, write, and discuss, work with several medias simultaneously, illustrate reports, create multimedia projects, cover relevant events together, create websites and webpages, engage in inquiry projects that take place in any corner of the world, and play multiplayer simulation games requiring them to solve problems and live together peacefully, technology can revolutionize how members of cooperative groups interact and work other.

Dewey (1938) affirmed that learning occurs from doing or action so taking part, being active in a club. Providing students with collaborative learning experiences not only promotes critical thinking and reflection but also encourages students to “develop a sense of community, thus enabling the creation of an environment in which further collaborative work can happen” (Palloff and Pratt 2005, 5). With this method taking into consideration the ideas and ways in which to improve students literacy, technological based clubs or collaborative learning using technological within a club; shows its effectiveness to students in literacy and other areas of development.

CHAPTER THREE:

METHODOLOGY

The purpose of this dissertation is to bring a sense of awareness and clarity to readers based on a problem that has been happening in many classrooms in the Jamaican education system and across the world. Research was done on other researches which shows evidence of reasons relating to the problem and solutions that they found and was implemented. There is urgency that needs to be placed on students who lack the necessary literacy level for each grade level they are in. With how technology is prevalent it is seen as the best alternative to help students increase their literacy through different means all related to technology. In the technological world that we live in the act of technology creates multiple opportunities for students to experience and gain literacy development which adds to what is taught within the classroom. Within this chapter, the methodology a description and evaluation of what researchers found will be explain and presented to the reader. This research is from a secondary research perspective as such the information presented does not infiltrate the privacy of any child or adult. References made from other researches, articles and journals which may have shown information about candidates within a research, those individuals will not be presented within the research as it has been withheld to protect and respect the privacy of these individuals. As a research it is the utmost duty that the privacy of candidates are respected as this is requirement of ethical considerations.

There are many studies which was done which has made effective contribution to the research topic presented. Not just in Jamaica but in the world there is a crisis as it relates to the reading ability of individuals and it all began at school. This has increased and since students of this era are considered to be digital natives its best to use technology to bring across reading and comprehension in a more fun and innovative way. According to the National Assessment of Educational Progress (NAEP) there were some test results which was presented by the U.S Department of Education; it shows that 65% of the 4th and 8th graders in the American public schools in 2017 were not proficient in reading. Now if you take a look at the statistics 65% is a rate in which the Education department should be worried about. Another alarming statistic was presented by same NAEP that shows that reading scores within the year 2019 was lower than in 2017. This statistics was done within 17 different states for grade 4 students and 31 different states for grade 8 within the U.S. Now what is more shocking is that 85% of the American school syllabus is delivered through reading. With that information presented to you then just imagine how many dropouts or illiterate students that are suffering. This statistics help to justify the 1.2 million students who drop out of high school each year within the US. According to the article every 26 seconds a student drops out of school, and when a student drops out of school without a high school diploma there are more likely to go to imprison. If they do get a job they will earn approximately twenty five thousand dollars per annum according to the Bureau of Labor Statistics. According to Alliance for Excellence Education “If the students who dropped out of class of 2011 graduated the nation’s economy would likely benefit from nearly \$154 billion in additional income over the course of their lifetime.” So here we see how far the effect of illiteracy can cause. Imagine if technology was used efficiently and effectively

within the classroom to improve students literacy which would indirectly cause less drop out which in return would help the economy of one's country and even create a better live for themselves. According to researcher Matt Hulett president of Language at Rosetta Stone Inc. and pioneer in Seattle technology startup community, adaptive blended learning (ABL) is an answer to provide an equitable solution for struggling students. Blended learning combines HI and AI which is Human Intelligence (HI) and Artificial Intelligence (AI) to enhance and develop the learner's potential. So how do these strategies actually help student's literacy? A study was conducted for two years which was funded by the U.S. Department of Education and The Carnegie Learning Blended approach almost doubled the growth performance on standardized test in relation to second year students' since its implementation.

With further reading it was found that every aspect of implementation relating to use technology to solve illiteracy within students were successful to some extent. The approaches came in many different ways how every the underline goal was to use technology in some way or the other. Not all the expert thought that technology was essential in helping students academic and literacy. They were looking at it from the perspective of screen time, where students would spend too much time on a device and get distracted doing other things which does not relate to the task at hand given by the teacher. To some extent that can be true as students can be easily distracted at times, however if that is taken into consideration before executing specific technological strategies then the issue of distraction will not be a problem. As it stands depending on the education system for a country there are many misconception that technology within education will decrease interactive time with

teachers and the traditional pen and paper. That can be that some teachers fear change and innovation as well, however that should not be so if that's the case as students in today's society is considered as digital natives and innovation has to take place to properly interact with them so that teacher can bring forth the lesson to them in the right way; so that they can understand what is taught and apply it. A Canadian Project which was awarded the UNESCO King Sejong Literacy Prize implemented a project January 2012 where it focused on developing literacy among Kenyan elementary school children. The tool which was used was called ABRACADABRA, all the tools where apart of the suit was bilingual where it came in French and English and included early literacy, numeracy and a digital library called READS. The students who apart of the programmed were involve with the program and embraced learning, as teachers apart of the program expressed that the attendance skyrockets when they were told that the ACADABRA lesson was going to commence on that specific day. Students eventually learnt how to read and write, while others improved on what level they were at prior to the program. So if we are to analyze the effects of technology and its relation to improving literacy without a doubt it can be said that yes technology helps with improve a child's literacy level. There are some countries who are trying to adjust their curriculum to integrate technology within to improve the literacy and academics of their students. Jamaica is one such country that has gradually implement technological programs to improve literacy as it has been growing over the years and continue to grow. Arguably technology way has its issues when it's not used properly, however when it is organized properly and executed with positive intentions such as to improve aspects of education such as reading and writing; it plays an integral role in proving such areas within the education sector within any country. Jacky Egli postulated that "technology builds

those auditory and language skills of students allowing them, generally to be more receptive to learning because typically 80 percent of the instructional day relies on auditory information” The texts and reading sources which were used was specifically selected as they clearly show the importance and positives of what the research title is about. Also they spoke about limitations and arguments which had doubt about their research findings. Which brought forth proper argumentative analysis which will determined how effective the research of these articles are and how strong the evidences are that are within the findings.

CHAPTER FOUR

RESULTS AND FINDINGS

During the compilation the researcher found that there was a series of research done by other researchers which is presented within multiple articles, journals, books and government statistical forums. These statistics will be presented to the writer in the format of text and diagram presentation, so that the necessary findings can be presented in a well-organized and effective way. Within the United Kingdom a survey was done by the National Literacy Trust to find how effective was technology in helping to increase the literacy in a school environment. This was a survey which was done in 2018 by the United Kingdom teachers. The results from the survey was used to answer of of three research questions within this research. The research question was “What impact can a technological program help secondary students’ literacy level” From the survey done there was 219 responses from 166 schools. Approximately 53.9% were from teachers based in primary schools and 37.9% were from secondary schools. The remainder 8.2% were from a range of educational settings such as pupil referral units and special schools. With the above percentage of participating teachers’ findings shows that 43.8% of teachers said they used technology to support literacy on a regular basis, with 22.8% using it daily and 21.5% a few times a week. On the other hand the minimum 20.1% stated that they rarely or never used technology for literacy development. According this finding it shows that majority of teachers has been using technology for literacy level enhancement. We can argue that majority of teachers used technology for literacy development due to

the fact that it works and do improve students' literacy. With this said, using the same survey done 86.8% of teachers considered the ability to engage and a 66.7% saw the ability to enable pupils to be principal benefits of using technology in the classroom. Once more we have seen the positive responses from teachers as their to technology impact on students learning. The survey showed that most respondents saw technology to have a positive impact on students. The survey showed that technology had a positive impact on 68.5% of reluctant readers and 64.8% of boys and this is followed by reluctant writers and less able readers and writers.

The findings went further to answer another research question, "Can technological intervention programs help secondary students' literacy level?" Respondents stated that popular platforms, programs and apps were used to support literacy within the classroom. Some of the programs used were as follows accelerated reader, clicker and kahoot. The responds of the survey also expressed that using technology to improve students' literacy increased students' motivation and confidence.

Approximately 61.6% of teachers believed that personalized learning benefited from using technology, while 53.9% believed that assessment was where most of the benefits goes. Another 47.9% believed that it saved time and support independent learning from students. However there are others who believe the potential of technology could be more effective for helping teachers make effective use of their time say the final 42.0%. When the idea of integrating technology come into play we have to take into consideration the stake holder's attitude towards it. As persons may be adamant with learning how to change their standard way of teaching execution to a more technological approach. With the same survey done 56.2% of teachers

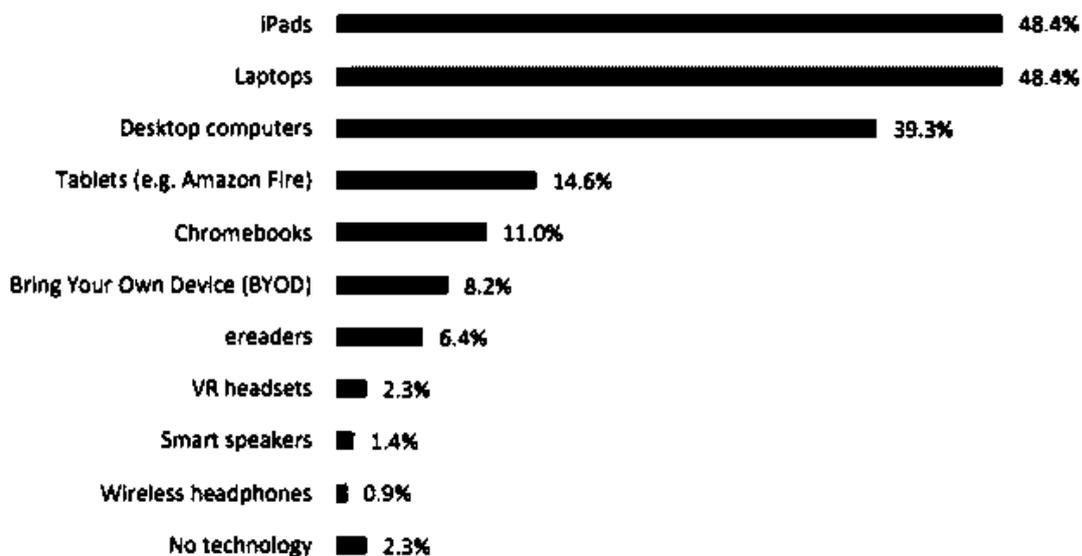
believed that non technology teaching was just as good as technology based teaching. However 88.1% of teachers believed that students should be prepared for a workplace that is digitally driven. The statistics shows that limitations to use technology to enhance literacy were more so because of resources other than an individual's attitude towards it. Survey within the UK showed that majority of teachers stated that there were lack of resources, 58.4% stated the lack of hardware, software and Wi-Fi another 51.6% stated that it was finances and 45.2% said it was outdated or insufficient hardware. All these limitations were the areas in which they believe are stopping teachers from effectively using technology to support literacy in the classroom.

It is imperative that within an organization when there is a new program or area employees need to be trained to utilize these new programs. Many teachers are not as computer savvy as the ones graduating from university now, so any technology program being implemented need to take into consideration that these teachers will need to be trained. Out of the survey done 23.3% of the respondents stated that they received no training in any area relating to technology supporting literacy learning. Another 22.8% said even though they didn't receive any training or hold any qualification they are interested in receiving one.

When the implementations of technological programs which supports literacy there are always the area of availability of devices which will surface. As such it is important to understand that if a program such as that is implemented will students be able to access it? Do they have the necessary devices at home or school to

utilize this program effectively. These are some of the questions that pops up, eBooks will be available but we need to know that they can be accessed on devices. According to The National Literacy Trust in the United Kingdom a survey was done to see how many devices students had in their classrooms. Responses of the survey showed that students had access to many different types of hardware in the classroom, access to hardware devices were low with around 48.4% of teachers stating that students had iPads and laptops. Below is the diagram (Figure 1) showing the results from the survey. The responses are from the question asked:

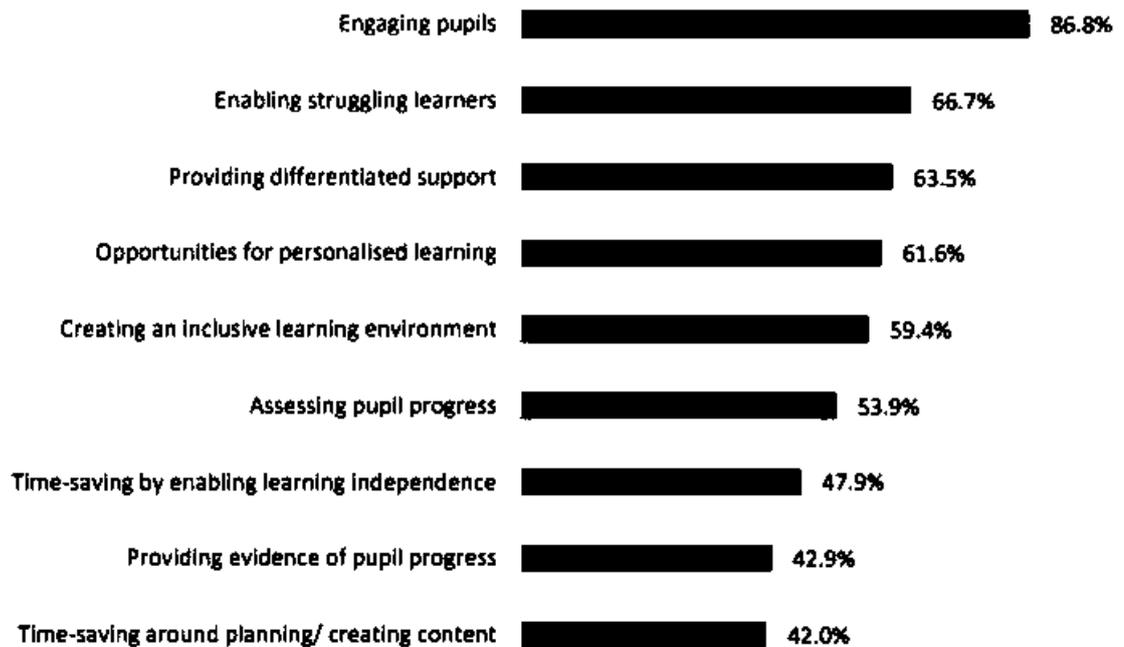
Which of the following do your pupil have access to in the classroom? (Tick all that apply)



It cannot be hidden or not to acknowledge that technology is one of the main ways to engage students within the classroom. Which is return will help any student increase their literacy as long as the technology is effectively use properly within the classroom. Within the same survey done by the national literacy trust it shows that 9

out of 10 teachers agreed that technology engage students in literacy and help with struggling students. Below is a diagram (Figure 2) from the National Literacy Trust survey that shows the responses from teachers on.

The main benefit of using technology to support literacy.

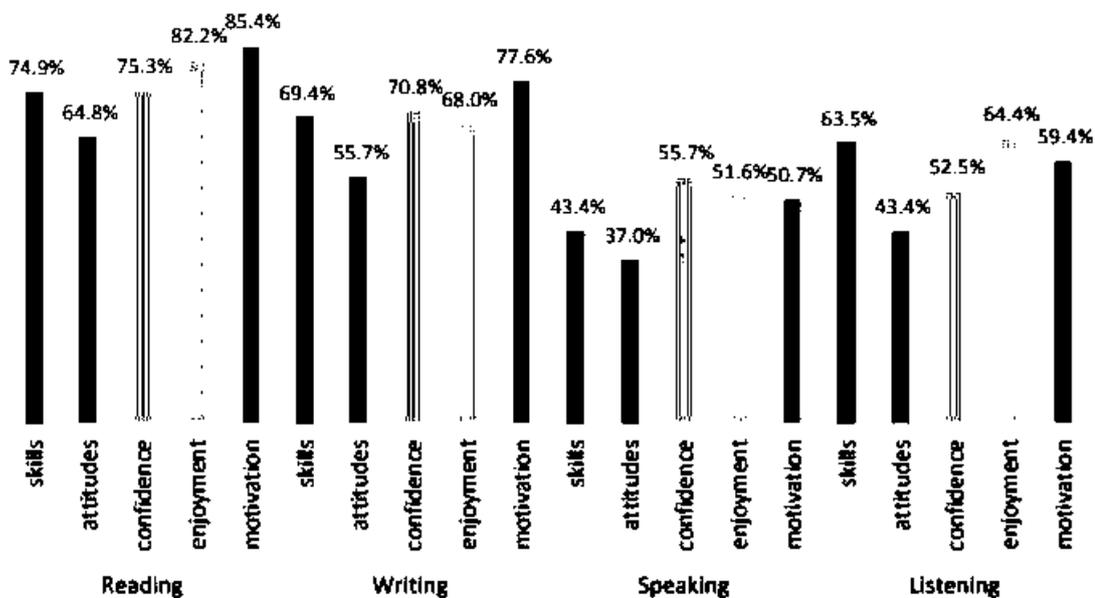


On a daily basis we read something or write something in many different formats to others or even to ourselves. All of this is done through some technological device, whether it's our smart phones, tablets or laptops. We read from eBooks or news posted on social media, statistics has shown that individuals read more from the screen than from traditional books which is why we have seen where every new company broadcast everything online so it can better be seen by the populous. Children do the same, they are "planted in front of their devices" everyday majority of the time of the day. This shows why they are so engaged when technology is being used in a lesson, they are captivated by it and shows more

interest. Children and young people also enjoy writing a range of materials on screens, including fiction, blogs and song lyrics (Clark, 2018). There was a review that was done, looking at the use of technology to enhance learning. The review showed that there were positive results in mathematics and science areas “...in literacy the impact tends to be greater in writing interventions compared with reading or spelling” (Higgins et al., 2012).

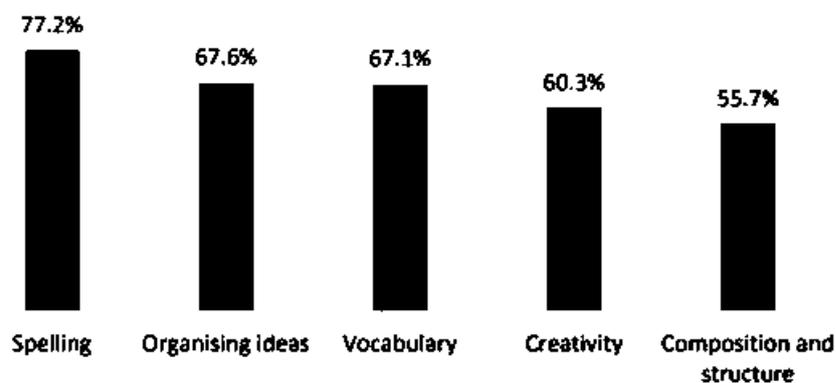
When the survey conducted by National Literacy Trust (NLT) was done a 74.9% believed technology had a positive impact on children’s reading skills, while a 69.4% believed it positively enhance children’s writing skills. The diagram below is depicting the responses from teachers as to:

Teachers’ perceptions of aspects of literacy most positively impacted by technology. (Figure3)



Teachers' responses to which area of academics it supported varied as some believed it offered more benefits in other areas than what other mentioned. Some believed that the technology could offer more support in spelling while other mentioned writing and vocabulary learning. Below is a diagram (Figure 4) done by the NLT which shows teachers responses to the statement:

Teachers' perception of aspect of writing best supported by technology.



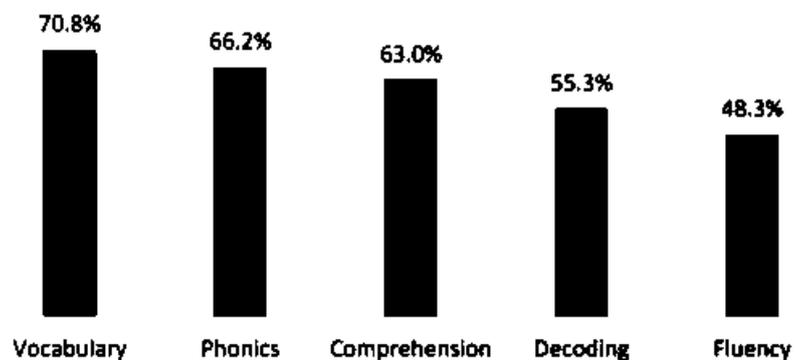
This shows that technology can benefit is all areas of writing and they are positive contribution due to the integration of technology. These responses can be supported by other researchers we have received the level of findings to the impact of technology to students writing skills. Neumann (2016) stated that tablet writing may be a key activity for early literacy learning.” Another research which was conducted which also considers the use of technology in the classroom to help with literacy was a 2012 meta-analysis which was done with a series of 27 studies which was geared towards the impact of word processing in struggling writers. The studies revealed that there were positive impacts on writing quality and length, also motivation with immense results related to platforms that supported planning and revising (Morphy and Graham). Professor of Radboud University Prof. Bekkering found that software

applications can be a major benefit for teachers in teaching the technical areas of writing, he stated that “particularly for boys, who are on average less good in fine motor skills and often spend their entire elementary school time learning to write neatly” (cited in Teachers’ use of technology to support literacy in 2018, 2019).

The survey done also showed the results from the responses as it relates to reading. There was a 85.4% of teachers who believed that technology played a role in children’s motivation to read. Another 82.2% believe that it contributed to children’s enjoyment to read and 74.3% of teachers believed that technology in the classroom contributed to student’s confidence when it comes to reading. Out of the entire survey done by the National Literacy Trust in 2019 the findings relating to technology impact on reading shows that 74.9% of respondents felt technology has a positive impact of their students’ reading skills. They were asked to be more specific as it relates which areas of reading was technology more impacted, the diagram below shows:

Teachers’ perceptions of aspect of reading best supported by technology.

(Figure 5)



CONCLUSION

The aim of the study was to discover if technological extracurricular activities and programs can be used to enhance the literacy of secondary students, also allowing them to appreciate the ways and means to improve such literacy and knowing its importance to an individual's development. All these were attributes which was due to the research which was done by reviewing and analyzing other researches which would have done researches within this area.

The researcher found a very important issue that was causing the students not to be at the required literacy level. Rather there were multiple issues that varied as it relates to what would cause a student not to be on par to the normal literacy standard that they should be. As students didn't receive the foundation they should get in the area of literacy. "To become fully literate in today's world, students must become proficient in the new literacy of information and communication technologies (ICTs). Therefore, literacy educators have a responsibility to effectively integrate these technologies into the literacy curriculum" (International Reading Association, 2002). Clear evidence of increased motivation excitement for learning as a result of technology use (Cummins, Brown, & Sayers, 2006). From the research done there where a lot of positives that can be taken from it. Secondary researches has shown that motivation and confidence was something that technology gave students when it comes to improving their literacy.

This was seen in the survey done by the national literacy trust where teachers gave their personal experiences in class and the what they have observed with students who has increased their literacy due to technology integration. From the enhancement of reading and writing, specific aspect within those areas as well manifest in the research. "Education is merely the fostering of natural development and true education takes place when the nature, power and inclinations of the child are allowed to develop freely with a minimum of guidance" this was showcased in the classroom when the teacher appreciated the involvement of technology and applied it to the classroom activities.

During the research it was seen where many theories supported the use of technology to improve literacy whether it's in the form of an extra-curricular activity or as an individual setting. Theories such as constructivism which believes that learning occurs when one constructs both mechanisms for learning through experiences. With the use of technology comes experiences which will then be directed to the knowledge garnered by students that will improve their literacy. Another theorist who believed that integrated topics will improve students learning is John Dewey, who also believed in social experiences. Technology integration with extra-curricular activities with the use of technologies will help a child's literacy.

During the research there were many programs that were implemented by countries and schools in which they deemed successful. The use of devices with the proper software was one aspect and teaching teachers how to apply and execute these within the classroom was another. All of these ways and techniques are some which should be recommended to be used by schools that have difficulties adjusting to

current time with students who are digital natives and are weak in literacy. These ways and means will help increase a child's literacy level both in reading and writing. All these will be suggested to different education bodies to help increase the rate of literacy in the country and also improve students' confidence and motivation which it also helps does.

One of many limitations that was faced by the researcher was that because this is a secondary research it was difficult to find any research done by prior researchers on this topic about Jamaica education system. The research was aimed to find as much as it could on Jamaica's education system and how technology can improve literacy within that country. Documents were found that spoke about intentions to increase the literacy of students but not much information was given as it relates to how it was done or if a research was being conducted or was done on it. During the research a major strength was that it was not difficult to find techniques and recommendation of technological exercises that was created and implemented by other countries schools. They also provided detailed information on the different steps and ways in which they applied these technological exercise in the classroom, which gave the researcher a great way to consider and aim to utilized and recommend these practices in the classroom to teachers. Another strength was that the research was able to find responses from teachers who were in the middle of students who are literacy low and a technological program that was aim to improve that even though it was alien to them. It was able to show from a teacher's perspective the challenges they faced with adopting to current technologies for the benefit of the students. Some implications however was that screen time on devices with students will increase which can on the other hand add to distractions. So they will lose focus and lose

sight of the sole purpose of using the devices. However from the statistics shown all researches displayed that the students improved as long as teachers knew how to integrate the technology properly and effective training was done for them to execute properly.

It is recommended that educational sectors and school administrators try their best to take a more subtle approach to technology. As there are some educators who may fear to learn something new about technology which they will have to use in the class, there are others who believe that the traditional standard pen and pencil can work just as good. Schools and governments should aim to train teachers and keep them up to date and current with the changes in the education system, as the classroom has many different learners with many different styles of learning. If technology can be used to help some of these students understand and accept their true potential then a rise in literacy will be seen and a change in the workforce will eventually be seen on a positive basis. Also it is recommended that proper technological resources be considered for these classrooms as the software that are needed will be the hardware to execute activities for students to use. Some schools lack the necessary resources as the statistics presented in the research has shown. Educational ministries should aim to try and equip schools with the necessary hardware and software which will be needed for within the classroom.

APPENDICES

When this research was being conducted there were two main audiences that it was aim for. Teachers and administrators within schools and educational ministries and institutions. This was so due to the fact that, what the research about can only be executed by the said audiences when the solutions and recommendations are presented. Teachers because they are the practitioners who will be executing the daily actions within the classroom to ensure the students receive the best lesson that is possible available. Also due to the fact that students are faced with many challenges not controllable by them such as a struggling students who has a low literacy level. That students may just be a late bloomer when it comes to literacy. With the help of this research teachers can see the recommendations and details of studies done on way in which they can help such a student with an element which is appealing to young people; which is technology. This research also wants to let teachers know that thinking the traditional way alone not only prevents you as the teacher not to develop with time but also the students wont because we would fail to innovate and execute new ideas.

Administrators/Education ministries are responsible for the implementation of specific programs within schools. There are many schools who still to date don't appreciate the use of technologies to improve students literacy or integrating technology in an extracurricular activity. This research is aim to convince them to do so as it has shown its merits when technology is added to the classroom and used to

improve students literacy both reading and writing. The research has given them an insight of implementing programs that are geared towards a specific purpose.

For the benefit of the public this research will be disseminated to educational website for viewing. So that persons within and around the educational space can see and appreciate this research and apply some of the recommendation presented. Schools library both at the secondary and tertiary level will also be sent a copy to be stored so that it can be available for prospective teachers and existing teachers to view. It will also be converted to an eBook which will also be posted on educational websites for free downloading.

Anyone within the educational space or relating to the educational sector will benefit from a research such as this. Persons who are also conducting researches about topics similar to this research will also benefit from this research. Teachers who are having issues wondering what can done to improve their students' literacy they as well can benefit from this informative research which will enhance their horizon on the use of technology.

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ABSTRACT

THE RESEARCH LOOKS AT CERTAIN LIMITATIONS THAT WILL BE FACED BY EDUCATORS USING TECHNOLOGY FOR LITERACY IMPROVEMENT FOR STUDENTS. THEORIES AND METHODOLOGIES ARE MENTIONED TO BETTER ABLE GIVE A BETTER VIEW OF THE BENEFITS OF TECHNOLOGY WITHIN THE CLASSROOM. THIS RESEARCH EXPRESS THE IMPORTANCE THAT TEACHERS KEEP ABREAST WITH THE CURRENT INNOVATIONS WITH TECHNOLOGY SO THAT THEY CAN ALWAYS ENGAGE WITH THEIR STUDENTS AND KEEP THE CLASSROOM AS ACTIVE AS POSSIBLE, WHILE STUDENTS LEARN EFFECTIVELY AT THE SAME TIME. THE RESEARCH ALSO SPEAK OF THE ISSUES THAT ARE FACED BY MULTIPLE COUNTRIES AS IT RELATES TO LITERACY RATES AND ITS IMPACT TO THE ECONOMY AND THE COUNTRY AT LARGE. RECOMMENDATION WERE GIVEN AND SUGGESTIONS MADE. THE RESEARCH SHOWS IN DETAILED HOW IMPORTANT TECHNOLOGY IS TO IMPROVE STUDENTS IN THIS ERA LITERACY.

Research was conducted by Ewian Smikle with the support of previous researches done relating to a similar topic, credit must be given to all stakeholders involved.

Ewian Smikle BEd MA. Ed owner of E-Technology | Educating Through Technology provides technology content on the following platforms.



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