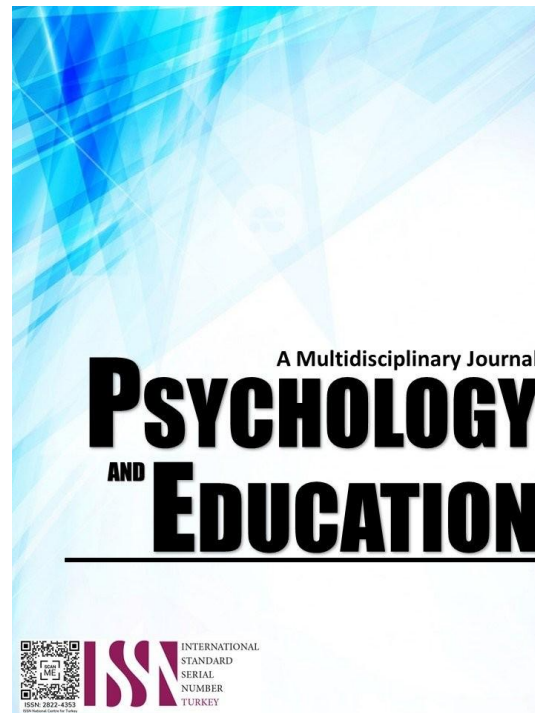


THE IMPACT OF DIGITAL TECHNOLOGY ON READING COMPREHENSION SKILLS OF SENIOR HIGH SCHOOL STUDENTS IN A PRIVATE SCHOOL IN GUMACA, QUEZON



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The Impact of Digital Technology on Reading Comprehension Skills of Senior High School Students in a Private School in Gumaca, Quezon

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Abstract

This study aimed to determine the impact of digital technology on reading comprehension skills of senior high school students. It determined the profile of the learners in terms of age, sex, grade level, strand and digital technology being used. It also revealed the impacts of digital technology on reading comprehension skills of senior high school students in terms of vocabulary, grammar and fluency. The researcher used descriptive method of research. This study employed proportionate random sampling design. Under this procedure, the researcher considered to use fifty (50) respondents from the selected Senior High School students in a Private School in Gumaca, Quezon. The findings revealed that most of the respondents are within 17 years old and below. The female respondents outnumbered the male population. All of the respondents were Grade 12 HUMSS and GAS. It was concluded that students response perception varies by age, but does not vary by sex, grade, strand and digital technology being used.

Keywords: *digital technology, fluency, grammar, strand, vocabulary*

Introduction

Reading comprehension is an essential skill for all students, it is a lifelong learning experience in developing skills while studying. Reading has to do with thinking, learning, and expanding a reader's knowledge and horizons. It has to do with building on past knowledge, and mastering new information. With digital technology becoming an everyday part of life for most human beings, it is impossible to picture life without it. Digital technology such as personal computers, tablets, cellphones, and less tangible forms of technology such as the Internet evolved as tools, systems, and devices that can generate, create, store, or process data. It has significantly changed the quality of life, the way students behave and operate, through the use of digital technology, it has become the new way of making student education more convenient in understanding the knowledge that the students must acquire, they generate new ideas or innovations and students can be aware of what is happening in the world. In this modern day, it is important to understand how digital technology has impacted students reading comprehension.

Chen & Lin (2014), said that despite the popularity of mobile reading devices, research has shown that small screens can hinder reading comprehension. Additionally, various reading contexts, such as sitting, standing, and walking, can also impact reading performance. Moreover, Bowie (2018) stated that students are entering high school with under grade level reading skills. Where, students and teachers are faced with finding alternatives to bring students up to a proficient level before they leave high school.

Three aspects of technology use were examined: perceptions toward student achievement in reading, perceptions of technology to assist with engagement and content mastery, and instructional strategies that support the skills of literacy and comprehension. Through the infusion of technology, students began taking an initiative in their learning, in which, the use of technology with students in secondary English classes indicated that teachers understand the benefit of technology in the 21st century to propel student academic achievement.

Furthermore, Baron (2015), weights the value of reading physical print versus online text, including the question of what long-standing benefits of reading might be lost if we go overwhelmingly digital. She also probes how the internet is shifting reading from being a solitary experience to a social one, and the reasons why e-Reading has taken off in some countries, especially the United States and United Kingdom, but not others, like France and Japan. Reaching past the hype on both sides of the discussion, Baron draws upon her own cross-cultural studies to offer a clear-eyed and balanced analysis of the way technology is affecting the ways we read today and what the future might bring.

In Eastern Quezon College the researcher found out that there are various impacts of using digital technology on their reading comprehension skills. Digital technology provides advantage such as accessibility and interactive experiences, these also introduce new knowledge to the students which improves the reading comprehension skills, but the use of digital tool demand careful management to foster strong reading comprehension skills in digital era, students must balance the use of technology to recognize and decoding words but also to comprehend the meaning and context of information that leads to academic success. It is clear that technology is more than a tool for educational progress. Therefore, effectively harnessing digital technology's benefits is vital for equipping students to navigate their knowledge-driven world.

Research Questions

This study aimed to determine the impact of digital technology on reading comprehension skills of the senior high school students at Eastern Quezon College Inc. Specifically, it sought to answer the following question:

1. What is the profile of the respondent according to;

- 1.1 age;
- 1.2 sex;
- 1.3 grade level;
- 1.4 strand; and
- 1.5 digital technology being used?
2. What are the impacts of digital technology on reading comprehension skills of students in terms of:
 - 2.1 vocabulary;
 - 2.2 grammar; and
 - 2.3 fluency?
3. Is there a significant difference on the perceived impact of digital technology on reading comprehension skills of the students when they are grouped according to profile?

Methodology

Research Design

This study used descriptive method of research in order to determine the impact of digital technology on reading comprehension skills of the senior high school student in a private college in Gumaca, Quezon.

Descriptive research is a quantitative research method that is considered conclusive and is to be used to test specific hypotheses and describe characteristics or functions. (Fluet, 2021).

Respondents

The total number of respondents to was fifty (50) senior high school students which is drawn using the proportionate sampling. Proportionate random sampling is a probability sampling technique in which the total population is divided into homogeneous group to complete the sampling process (Hayes 2023).

Instrument

The study used survey questionnaire to determine the impact of digital technology on reading comprehension skills of senior high school students in a Private Educational Institution in Gumaca, Quezon in School Year 2023-2024. The survey questionnaire made of two parts. The first part is the demographic profile of the respondents in terms of age, sex, grade level, strand and digital technology being used. The second part 2 is to determine the impact of digital technology on reading comprehension skills of senior high school students.

Procedure

First of all, the researcher asked the approval of the thesis adviser. Then, the researcher secured permission from the principal of senior high school department in Eastern Quezon College. The questionnaire were given through face to face in classroom setting. After the data gathering, they were tallied, tabulated, analyzed and interpreted by the researcher.

Data Analysis

In this study, the researcher used statistical measures to treat the collected data. All the data were carefully read and examined for analysis. They were tallied and entered into a master list of the data collection sheet.

Percentage and Frequency are used to interpret the profile of the respondents.

To get the weighted mean to describe the items in the indicators, the researcher used the formula (Calmorin, 2007; 116-118).

To determine the significant difference of the effects of reading techniques to the reading comprehension of the senior high school students when grouped according to profile, the researcher used KRUSKAL WALLIS.

Results and Discussion

This section presents the result, the analysis and interpretation of data gathered. All the data gathered were presented here in tabled form with corresponding interpretation. The first part described the profile of the respondents in terms of age, sex, grade, strand and digital technology being used. The second part is the impact of digital technology on reading comprehension skills of the senior students in a private school in Gumaca, Quezon.

Table 1. *Frequency and Percentage Distribution of the Respondents According to Age*

Age	Frequency	Percent	Rank
17 years old below	35	70.00%	1
18 years old above	15	30.00%	2
Total	50	100.00%	

Table 1 shows the frequency and distribution and percentage of the respondents in terms of age. It shows that 17 years old below have a frequency distribution of 35 with percentage distribution of 70.00% and ranks 1st with percentage distribution of 30.00% and ranks 2nd. All of the respondents have a total of 50 frequency and percentage of 100%.

According to Libuna et al. (2019), in his research study, modern technology has become an essential tool for communication and information access worldwide. It is widely used by people of all ages, particularly teenagers who utilize it to conduct research and enhance their daily lives through access to information on the internet.

Table 2. *Frequency and Percentage Distribution of the Respondents According to Sex*

<i>Sex</i>	<i>Frequency</i>	<i>Percent</i>	<i>Rank</i>
Male	23	46.00%	2
Female	27	54.00%	1
Total	50	100.00%	

Table 2 shows the frequency and percentage distribution of the respondents in term of sex. It shows that female have a frequency distribution of 27 with percentage distribution of 54.00% and ranks 1st. On the other hand, male got frequency distribution of 23 with percentage distribution of 46.00% and ranks 2nd. All of the respondents have a total of 50 frequency and percentage of 100%.

According to Delgado et al. (2018), he mentioned that digital-based reading has become an unavoidable aspect of our daily lives even for most likely for female and a crucial component of the educational landscape.

Table 3. *Frequency and Percentage Distribution of the Respondents According to Grade level*

<i>Grade Level</i>	<i>Frequency</i>	<i>Percent</i>	<i>Rank</i>
Grade 11	24	48.00%	2
Grade 12	26	52.00%	1
Total	50	100.00%	

Table 3 shows the frequency and percentage distribution of the respondents in terms of grade level. It shows that grade 12 have a frequency distribution of 26 with percentage distribution of 52.00% and ranks 1st. On the other hand, grade 11 got frequency distribution of 24 with percentage distribution of 48.00% and ranks 2nd. All the respondents have a total of 50 frequency and percentage of 100%.

According to Santos & Mendoza (2015), they found that students who used digital technology to read had higher reading comprehension scores than students who did not use digital technology. Also most of the high school students used digital technologies are Senior high school students than Junior high school students.

Table 4. *Frequency and Percentage Distribution of the Respondents According to Strand*

<i>Strand</i>	<i>Frequency</i>	<i>Percent</i>	<i>Rank</i>
HUMSS	17	34.00%	1
ABM	16	32.00%	2
GAS	17	34.00%	1
Total	50	100.00%	

Table 4 shows the frequency and percentage distribution of the respondents in terms of strand. It shows that HUMSS and GAS have a the same frequency distribution of 17 with percentage distribution of 34.00% and ranks 1st. On the other hand, ABM got frequency distribution of 16 with percentage distribution of 32.00% and ranks 2nd. All of the respondents have a total of 50 frequency and percentage of 100%. According to Libuna et al. (2019), modern technology has become an essential tool for communication and information access specially on ABM students in Bestlink College of the Philippines School.

Table 5. *Frequency and Percentage Distribution of the Respondents According to Digital Technology being used*

<i>Digital Technology</i>	<i>Frequency</i>	<i>Percent</i>	<i>Rank</i>
Computer	2	4.00%	4
Laptop	17	34.00%	2
Smartphone	22	44.00%	1
Tablet	9	18.00%	3
Total	50	100.00%	

Table 5 shows the frequency and percentage distribution of the respondents in terms of digital technology being used. It shows that smartphone have a frequency distribution of 22 with percentage distribution of 44.00% and ranks 1st. On the other hand, laptop got frequency distribution of 17 with percentage distribution of 34.00% and ranks 2nd. While tablet got a frequency distribution of 9 with

percentage distribution of 18.00% and ranks 3rd. Lastly, computer got a frequency distribution of 2 with percentage distribution 4.00% and ranks 4th. All the respondents have a total of 50 frequency and percentage of 100%. According to Hoff (2014), he stated that computer, phones, still and video cameras have evolved into an all-in- device with internet access providing access to any information, whenever, and wherever the individual wants it. Wireless mobile phone and tablets allow the internet and it is digital affordances to flow into every hand, everywhere, in every circumstance.

Table 6. *Perceived Impact of digital technology on reading comprehension skills of senior high school in terms of Vocabulary*

Digital technology...	WM	VI	R
1. Provide access to a wider range of my vocabulary words.	4.22	Strongly Agree	1
2. Help to learn and retain my vocabulary words more effectively.	4.06	Agree	4
3. Help me to have a deeper understanding of what I read.	4.16	Agree	2
4. Help me to engage in reading process.	4.14	Agree	3
5. Can help boost my vocabulary words, grammar and reading comprehension skill over time.	4.16	Agree	2
Overall Weighted Mean	4.15	Agree	

Legend: "Strongly Disagree (1.0-1.80)", "Disagree (1.81-2.60)", "Fairly Agree (2.61-3.40)", "Agree (3.41- 4.20)", "Strongly Agree (4.21-5.00)"

Table 6 depicts the respondent's impact of digital technology on reading comprehension skills of senior high school students in term of vocabulary. It shows that the weighted average mean in statement no.1 has 4.22 with verbal interpretation of strongly agree and ranks 1st. On the other hand, statement no.3 and no.5 has the same weighted average mean of 4.16 and ranks 2nd. While, statement no.4 got weighted mean of 4.14 and ranks 3rd. Lastly, statement no.2 got weighted mean 4.06 with the lowest rank of 4th and all of those statement got a verbal interpretation of agree except for question no.1 that got strongly agree. The overall response of the student in terms of vocabulary got a weighted average of 4.15 with the verbal interpretation of agree. According to Terry (2023) Comprehension is the ability to understand and use what you have read or learned. Vocabulary is the body of words you know. Reading comprehension involves understanding, analyzing, and synthesizing words, sentences, and ideas. Words are everywhere, so as we improve our word knowledge, our vocabulary, we improve comprehension.

Table 7. *Perceived Impact of digital technology on reading comprehension skills of senior high school in terms of Grammar*

Digital technology...	WM	VI	R
1. Make grammar learning more fun and engaging.	4.12	Agree	2
2. Can be valuable tool for supporting effective grammar instruction.	4.06	Agree	3
3. Can help to improve my grammar skill over time.	4.02	Agree	5
4. Help my learning on grammar rules.	4.04	Agree	4
5. Increases my engagement and motivation for learning grammar.	4.14	Agree	1
Overall Weighted Mean	4.08	Agree	

Legend: "Strongly Disagree (1.0-1.80)", "Disagree (1.81-2.60)", "Fairly Agree (2.61-3.40)", "Agree (3.41- 4.20)", "Strongly Agree (4.21-5.00)"

Table 7 depicts the respondent's impact of digital technology on reading comprehension skills of senior high school students in terms of grammar. It shows that the weighted average mean in statement no.5 is 4.14 with verbal interpretation of agree and ranks 1st. On the other hand, statement no.1 got weighted average mean of 4.12 and ranks 2nd. While, statement no.2 got weighted average mean 4.06 and ranks 3rd. Regarding on statement no.4 got weighted average mean of 4.04 and ranks 4th. Lastly, statement no.3 got weighted average mean of 4.02 and ranks 5th. All of those questions got a verbal interpretation of agree. The overall response of the student in terms of grammar got a weighted average of 4.08 with the verbal interpretation of agree.

According to Aisyiyah, et. Al (2024), Grammar instruction was previously centered on rote memorization and textbook exercises, which frequently isolated students from the use of language in everyday situations. However, the incorporation of digital tools, gamification, virtual learning environments, and adaptive systems has revolutionized grammar instruction and created more dynamic and engaging learning opportunities.

Table 8. *Perceived Impact of digital technology on reading comprehension skills of senior high school in terms of Fluency*

Digital technology...	WM	VI	R
1. Improve my reading speed.	4.28	Strongly Agree	1
2. Increase my engagement and motivation for reading.	4.14	Agree	2
3. Is a valuable tool to support development of my reading fluency skills.	4.14	Agree	2
4. Is easy for me to read fluently when I use technology.	4.14	Agree	2
5. Make me more fluent reader and it enhances my reading comprehension.	4.14	Agree	2
Overall Weighted Mean	4.17	Agree	

Legend: "Strongly Disagree (1.0-1.80)", "Disagree (1.81-2.60)", "Fairly Agree (2.61-3.40)", "Agree (3.41- 4.20)", "Strongly Agree (4.21-5.00)"

Table 8 depicts the respondent's impact of digital technology on reading comprehension skills of senior high school students in terms of fluency. It shows that the weighted average mean in statement no.1 is 4.28 with verbal interpretation of strongly agree and ranks 1st. On the other hand, all statements remaining got weighted average mean of 4.14 and ranks 2nd. All of those questions got a verbal interpretation of agree except for question no.1 that got strongly agree. The overall response of the student in terms of fluency got a weighted average of 4.17 with the verbal interpretation of agree.

According to Spencer (2015), digital fluency can also be considered as part of a broader set of competencies related to '21st century' learning. Being able to manipulate technologies so we can create and navigate information successfully is supported by our ability to work collaboratively, solve real-world problems creatively, and pursue our own learning goals, and so on.

Table 9. *Kruskal–Wallis H–Test: difference on the perceived impact of digital technology on reading comprehension skills of the students when they are grouped according to profile*

Profile	Scales	Mean Rank	K – statistics	p-value	Decision	Remarks
Age	17 years old below	24.04	3	0.04745	Reject Ho	Significant
	18 years old above	32.23				
Sex	Male	45.57	2	0.08541	Failed to reject Ho	Not significant
	Female	37.63				
Grade Level	Grade 11	28.17	2	0.1756	Failed to reject Ho	Not significant
	Grade 12	24.96				
Strand	HUMSS	30.56	3	0.09045	Failed to reject Ho	Not significant
	ABM	19.5				
	GAS	26.09				
Digital Technology Being Used	Computer	25.88	4	0.1581	Failed to reject Ho	Not significant
	Laptop	30.97				
	Smartphone	20.15				
	Tablet	26.89				

Table 9 shows the significant difference of Impact of Digital Technology on Reading Comprehension Skills of Senior High School Student in a Private School according to profile. According to profile indicator in age, the P-value was 0.04745 which is less than the 0.05 level of significant implied to reject the null hypotheses. This mean there was a significant difference on the perceived responses when a group according to profile indicators in age. Therefore, the profile indicator in sex has a P-value equivalent to 0.08541. If the P-value is more than the 0.05 level of significant implied to reject the null hypotheses, the null hypotheses should be accepted. Also the profile indicator in grade level has a P-value equivalent to 0.1756, profile indicator in strand has a P-value equivalent to 0.09045, and profile indicator in digital technology being used has a P-value equivalent to 0.1581 which is more than the level of significant implied so the null hypothesis should be accepted.

Based on the research study of Suparlin et al. (2022) about reading comprehension, high schools students are significant at 0.05 level of significant implied to reject the null hypotheses of his research study. Reading comprehension can enhance using digital technology by helping of e-learning; student can make a huge improvement in reading and enhance their vocabulary, grammar and fluency.

As a result, the researcher conclude that the age group has significant difference in the impact of technology on reading comprehension so that come up with the idea that the response varies by age while regarding sex , grade level, strand and digital technology being used has no significant difference which the perception of the respondents does not varies by, sex, grade level, strand and digital technology being used.

Conclusion

Based on the findings of this study, the following conclusions have been drawn:

Majority of the respondents were female. Most of the respondents were 17 years old and below with percentage of 70%. The respondents' grade levels were grade 12 with percentage of 52%. Most of the respondents are from the strand of HUMSS and GAS with percentage of 34%. Regarding to the digital technology being used by the respondents smartphone have the highest responses among the four digital technology with percentage of 44%.

The overall response for vocabulary was 4.14 interpreted as "Agree." In terms of Grammar, the overall response of the respondents was 4.08, also indicating "Agree." Regarding for fluency, the overall response was 4.17, interpreted as "Agree."

The study concluded that digital technology is highly effective in enhancing reading comprehension skills in terms of fluency , as reflected by the highest response among respondents.

There was a significant difference in the age bracket of 17 years old and below and 18 years old and above with a p-value of 0.04745, which is less than the 0.05 level of significance, we rejected the null hypothesis. There was no significant difference between the response of male and female with p-value of 0.08541, which is more than the 0.05 level of significance, we accepted the null hypothesis. There was no significant difference when it comes to grade level with the p-value of 0.1756, which we accepted the null hypothesis.

For strand there was no significant difference between the responses of HUMSS, ABM and GAS with the p-value of 0.09045, which we accepted the null hypothesis. Regarding to the technology being used by the students there was no significant difference between the responses when it come to computer, laptop, smartphone and tablet with the p-value of 0.1581, which we accepted the null hypothesis. This result confirmed there is no significant difference in determining the impact of digital technology on reading comprehension skills when they are grouped according to profile.

In light of the presented findings and conclusions, the following recommendations are hereby offered:

To the School Administrators, they may:

Encourage the integration of digital technology into the curriculum.

Allocate resources and support for implementing varied digital technology to the enhancement of reading comprehension skills for the students.

Integrate opportunities for teachers to enhance their understanding of effective use of digital technology as an instruction for enhancing students reading comprehension skills.

To the English Teachers, they may:

Utilize vocabulary, grammar and fluency exercises by the used of digital technology in the classroom setting to enhance students reading comprehension skills.

Incorporate digital technology activities as instruction methods across reading comprehension skills (vocabulary, grammar and fluency) to gained deeper understanding of a text.

To the Researchers, they may:

Further investigate the impact of digital technology on reading comprehension skills in a different aspect.

Explore more about the impact of digital technology on reading comprehension skills in the educational setting.

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