INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2024, Vol. 5, No. 6, 2107 – 2115
http://dx.doi.org/10.11594/ijmaber.05.06.13

Research Article

The Level of Reading Interest and Speed Reading of Science, Technology, Engineering, and Mathematics Learners: A Correlational Study

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Article history:
Submission June 2024
Revised June 2024
Accepted June 2024

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ABSTRACT

Speed reading is a requisite skill in reading comprehension among adolescent learners. It allows them to process information quickly and meaningfully. Since reading has been a major concern of the Philippine education despite efforts exerted for years, this study aimed to determine whether reading interest itself among adolescent learners correlates with speed reading, particularly grade 11 science, technology, engineering, and mathematics (STEM) learners from a private university in City of Koronadal, South Cotabato. A descriptive-correlational design was used in the study, utilizing an adopted survey questionnaire to assess the level of reading interest and a reading comprehension test to assess the speed reading of the respondents. The data were analyzed using descriptive statistics such as weighted mean to describe the level of reading interest; an effective reading rate (EER) to assess speed reading; and a Pearson correlation coefficient (r) to determine the relationship between reading interest and speed reading. It was found that the level of reading interest of the respondents was high; their speed reading was classified as above average; and thus, there was a high positive correlation between the level of reading interest and speed reading among the respondents, signifying that efforts should be made as well toward intensifying love for reading among Filipino learners.

Keywords: *Correlation, Effective reading rate, Reading interest, Speed reading, STEM*

Introduction

1.1.Background of the Study

When we read, we look at each word for as long as we want, our brains are engaged in processing and interpreting the texts, and we are free to skip and reread it for as much as we want. Words that are difficult to integrate are typically fixated longer, readers may find it difficult and longer to comprehend the words. And words that are easy to understand are

How to cite:
Morong, N. H. H., Congayo, R. K., Benedicto, S. O., Esparcia, M. A. A., Oraca, E. V., Abal, G II & Cabe, A. C. C. (2024). The Level of Reading Interest and Speed Reading of Science, Technology, Engineering, and Mathematics Learners: A Correlational Study. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(6), 2107 – 2115. doi: 10.11594/ijmaber.05.06.13

what readers don't usually look at because they already know the meaning of the text (Rayner, 1998). Rayner et al. (2016) also stated that Speed reading has been an intriguing concept for decades, practicing reading can help have high comprehension and read text faster. Speed reading is not only about skimming through text but it is a skill that requires concentration and taking in more words at a glance. There are claims that the new method of text presentation is to read faster with good understanding. Another claim is that we can read faster than we normally do by moving our eyes, moving the eyes to get information or ideas from the text.

The process of reading involves complex cognitive skills, the practice of speed reading is an important aspect in teaching reading to enhance the skills of the readers quickly and be familiar to the words easily. In Saudi Arabia, there is a program for female students to help them increase their reading speed and comprehension for 6 weeks, consisting of 12 training sessions and 60 minutes each. Training students this skill can improve Saudi's reading and comprehension rate. It doesn't only make the country rate increase but also helps students in improving their skills. There are studies that show that the most international change that Saudi students must cope with is cognitive development. In addition, lack of training in reading can result in students having problems in memorizing without understanding. (Al-Arfaj & Alshumaimeri, 2012)

The 2018 and 2022 PISA results have brought attention to a notable problem within the education system of the Philippines, specifically in the area of reading comprehension. In the 2018 assessment, the Philippines placed last out of 79 countries, achieving an average score of 340, which is significantly lower than the OECD average of 487. Despite ongoing efforts to enhance the education system, the 2022 PISA results remained the same with no significant improvement, with the Philippines still ranking among the lowest performers. These findings emphasize the pressing requirement for interventions aimed at improving reading comprehension skills among Filipino students (Acido & Caballes, 2024).

Decena's (2021) findings stated that in the Philippines, reading is a core component of the basic education curriculum, and the quality of education has been questioned due to poor reading performance both locally and internationally. Pupils often feel frustrated when they don't understand what they are reading, and this can be even more frustrating for teachers to witness. When pupils struggle with comprehension, it can lead to a loss of interest in reading. Reading comprehension is crucial for developing literacy in various subject areas, so it is essential for students to not only understand but also retain the information they read. Idulog et al. (2023) also said that filipino students' reading ability have presented a challenge for educators and legislators alike. They experience difficulties in reading comprehension because their focus and attention are destructed by cellphones and social media. They spend more time using cell phones rather than reading. Despite the government's efforts to increase literacy rates in the Philippines, recent surveys have revealed that many pupils require assistance with reading comprehension, vocabulary growth, and critical thinking. Reading is the fundamental to academic success and reading interest can improve youth vocabulary, comprehension and critical thinking. According to Khairuddin (2013), the teachers and parents goal is to encourage young people or children to read so they can feel the pleasure of reading, teachers must help students to select books that they are likely to enjoy. Parents should support reading as a gateway to pleasure and provides books that children has interest. By encouraging youth, strong reading skills also open up numerous career opportunities, making it a valuable skill for future success. Promoting a love for reading can have a profound impact on the well-being and future prospects of young people.

1.2. Statement of the Problem

The main aim of the study was to determine whether there was any relationship between the reading interest and speed reading of the Grade 11 learners. Specifically, it sought to determine the (1) level of learners' reading interest; (2) the level of learners' speed reading; and (3) the significant relationship between the learners' reading interest and speed reading.

1.3. Hypotheses

Ho: There is no significant relationship between learners' reading interest and speed reading levels.

Ha: There is a significant relationship between learners' reading interest and speed reading levels.

1.4. Conceptual Framework

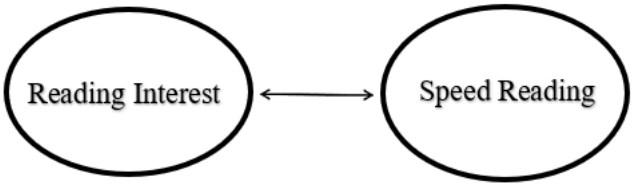

Figure 1. Conceptual Framework

The conceptual framework of this study seeks to determine the relationship between levels of reading interest and speed reading.

1.5. Definition of Terms

Reading Interest – it refers to the respondents' inclination to reading tasks related to academics.

Speed Reading **–** it refers to the respondents' process of rapidly recognizing and absorbing phrases or sentences per minute.

Effective Reading Rate – it refers to the measures used to identify the speed reading of the respondents.

1.6. Scope and Limitations

This study focused on determining the levels of reading interest and speed reading of students from a private university in City of Koronadal, South Cotabato. The reading interest covered the learners' regard for reading tasks including books, newspapers, and magazines. The speed reading covered the amount of time the learners can grasp information from a reading material and their reading comprehension level. The study, however, did not cover the issues and factors relating to the poor performance of the respondents in speed reading test.

1.7. Significance of the Study

The findings of the study can be beneficial to the following:

Teachers. The results of the study can help the teachers widen their view about the students who are interested in reading and the ones that can speak fast. This will allow the teachers to have a more concise and clear understanding about the students.

Parents. The results of the study can make parents aware of the factors that affect their children's reading interests and of their children's reading performance.

Learners. The results of the study can broaden the learners' knowledge about the difference between reading interest and speed reading. The study will allow them to understand what reading interest and speed reading have in common.

Future Researchers. The study can inform future researchers about the trends in reading performance of senior high school from different academic tracks, and can provide opportunities to further investigate the matter, particularly all issues pertaining to the reading interests and speed reading of the learners.

Methodology

2.1. Research Design

The study utilized a descriptive-correlational research design. Tan, L. (2014) stated that a correlational study seeks to ascertain relationships between two or more variables. Simply put, it examines whether an increase or decrease in one variable corresponds to an increase or decrease in another variable. Findings from a correlational study enable researchers to determine whether-and the degree to which-two variables change together.

Since the researchers aimed to determine whether there was any relationship between the learners' reading interest and speed reading, utilizing this design helped the researchers to obtain the desired data.

2.2.Locale of the Study

The study was conducted at a private university in City of Koronadal, South Cotabato, Philippines. The said locale is one of the few private academic institutions in the city which offers a reading organization like the book lovers club and the largest library in the city.

2.3.Respondents of the Study

The respondents of this study were Grade 11 science, technology, engineering, and mathematics senior high school learners. The total number of the selected population in the school year 2023-2024 was 435. Using the Cochran's, the sample size was 205, where the population portion is 50% and the margin of error is 5%. The 205 respondents were randomly selected.

2.4.Research Instrument

The researchers adopted a survey questionnaire for the reading interest and a reading comprehension test for the speed reading. To gather the data for reading interest, the researchers utilized an adopted survey questionnaire from Avila, E. and Gatpolintan, J. (2019), that consists of 18 items, 12 positive items and 6 negative items. The five-point Likert scale interpretation for positive items are: *Always (5), Often (4), Sometimes (3), Seldom (2), and Never (1).* On the other hand, the interpretation for negative items are: *Always (1), Often (2), Sometimes (3), Seldom (4), Never (5).*

Table 1. Levels of Reading Interest

Range	Description	Interpretation
4.21 - 5.00	Strongly Agree	Very High
3.41 - 4.20	Agree	High
2.61 - 3.40	Moderately Agree	Moderate
1.81 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

Adapted from Avila, E. and Gatpolintan, J. (2019)

To gather the data for speed reading, the researchers utilized an adopted reading comprehension test from Nugroho, E (2023). The validity of the test was tested using ANATESV4 program. ANATESV4 is a program to calculate the validity and reliability of the test. The reliability score of the test is 0.67. It shows that the reliability score of the test is greater than 0.60. It means that the test is reliable. The respondents were asked to do the reading and to record their speed reading through the Word per Minute (wpm) rate. The second was testing students' comprehension. The reading comprehension test was conducted after they had finished doing the speed reading through answering the reading comprehension questions related to the text they read. In this study, the respondents were instructed to time themselves (minutes, seconds, and milliseconds) during the speed reading.

Table 2. Levels of Speed Reading

No.	ERR	Classification
1.	1 - 200	Talker
2.	200 - 300	Average Reader
3.	300 - 700	Above Average Reader
4.	700+	Speed Reader

Adapted from Nugroho, E. (2023)

2.5. Data Gathering Procedure

The researchers of this study prepared a questionnaire of reading interest and speed reading test for grade 11 STEM students. The questionnaire was composed of questions that the researchers formed from the studies.

The following procedures were as follows: (1) The researchers wrote a permission letter to the school administration explaining the purpose and significance of the study; (2) After the approval, the researchers started to gather data from the grade 11 STEM students; (3) The researchers provided the informed consent first to the respondents and they distributed the questionnaires and test. The researchers communicated the nature of the study to the informants.

2.6. Ethical Consideration

The researchers conducted this study in complete accordance with established research protocols. The respondents were informed that their participation was voluntary and confidential, and that their identities remained anonymous. They also secured the consent forms from the respondents. Additionally, respondents were informed that the results of the study were solely for academic purposes and kept with the utmost confidentiality.

2.7. Data Analysis

To get the data on reading interest, the researchers calculated the weighted mean of the total points of all indicators in the survey questionnaire. The researchers used a table of interpretation adopted from Avila and Gatpolintan (2019) to provide interpretation on the analyzed data.

There were two procedures that must be passed in measuring reading speed (Sutz & Waverka, 2009). The first was measuring the reading speed and the second was measuring the reading comprehension. Then, both scores were integrated to get an Effective Reading Rate (EER).

To calculate the data of reading speed, the researchers divided the number of words in the text over the number of seconds required to read the text and then multiplied it by 60 to get the words per minute (WPM).

To calculate the data of the reading comprehension, the researchers divided the right answer over the maximum score and then multiplied it by 100%. To get the data of the grade 11 STEM students' speed reading, the researchers multiplied the respondents' words per minute (WPM) and their reading comprehension score to get the effective reading rate (EER). The researchers then calculated the mean of the total EER of the respondents to know their classification.

Upon obtaining the results of the reading interest and speed reading, the researchers will use an analysis technique by Karl Pearson, called Pearson correlation technique. The researchers used this technique to find out the correlation that exists between students' reading interest and speed reading scores.

Table 3. Pearson's Correlation Interpretation

Product moment (r)	Interpretation
0.8-1.0	Very strong correlation
0.6-0.8	Strong correlation
0.4-0.6	Moderate correlation
0.2-0.4	Weak correlation
0.0-0.2	Very Weak correlation

Adopted from Mochamad, F. (2015)

Results And Discussion

3.1 Level of Reading Interest

This section described the level of learners' reading interest as one of the study's objectives through their assessment using the adopted questionnaire. The mean was obtained through the sum of the levels of their agreement divided by the total number of respondents. The weighted mean was then calculated as the average of the means of all the indicators.

Table 4. The Level of Reading Interest

Indicators	Mean	Interpretation
I am not curious about the rest of the story after reading the synopsis	3.30	Moderate
I am able to criticize a book/newspaper/magazine that I have read	3.69	High
I am pleased when I read a book/newspaper/magazine.	3.79	High
I can read accurately.	3.80	High
I cannot give opinion about the book/newspaper/magazine that I have read.	3.24	Moderate
I get new experiences while reading.	3.80	High
I want to read more when I see a title of a book/newspaper/magazine.	3.68	High
I go to the library to read even if there is no reading task	3.48	High
I cannot conclude a text that I read	3.52	High
I get self-satisfaction when I read a book/newspaper/magazine.	3.80	High
I am easily attracted when I see a book/ newspaper/magazine.	3.54	High
I will buy a book/newspaper/magazine that I like.	3.67	High
I try to borrow a book from a friend or library if I don't have it.	3.52	High
I am able to retell what I have read.	3.55	High
I am bored of rereading a book/newspaper/magazine that I like.	3.23	Moderate
I feel less enthusiastic to do a reading task.	3.20	Moderate
I read a book even though It is a holiday.	3.39	Moderate
I do not like to read for a long time.	3.25	Moderate
Weighted Mean	**3.61**	**High**

Note. 4.21 -5.00 = Very High 1.81 - 2.60 = Low
3.41 - 4.20 = High 1.00 - 1.80 = Very Low
2.61 - 3.40 = Moderate

Table 4 shows that the reading interest of the Grade 11 STEM students is high with a weighted mean of 3.53. The indicators, "I can read accurately," "I get new experiences when I read," and "I get self-satisfaction when I read" had the highest mean with 3.80.

Reading interest can differ to many things. It can be that reading interest is a way for students to comprehend the text more; it can be that it is a hobby for many and those who have a lot of books; or it can be that reading in general is their way of living. Based on the results, students show a high scale of reading interest which highlights their love and passion for reading.

While reading in general is quite boring for many and although developing a passion for reading is a challenge for many children these days, according to Muhamad et, al. (2020), there are still those who find reading fun and interesting, may it be for pleasure or for academic purpose.

3.2. Level of Speed Reading

This section described the level of learners' reading interest as one of the study's objectives through their assessment using the adopted test. There are two procedures that must be passed in measuring reading speed. The first was measuring the reading speed and the second was measuring the reading comprehension. Then, both scores must be integrated to get an Effective Reading Rate (EER).

To calculate the data of reading speed the researchers divided the number of words in the text over the number of seconds required to read the text and then multiplied it by 60 to get the words per minute (WPM). To calculate the data of the reading comprehension, the researchers divided the right answer over the maximum score and then multiplied it by 100%. To get the data of the grade 11 STEM students' speed reading, the researchers multiplied the respondents' words per minute (WPM) and their reading comprehension score

to get the effective reading rate (EER). The researchers then calculated the mean of the total EER of the respondents to know their classification.

Table 5. Level of Learners' Speed Reading

Mean (EER)	Classification
360.19	Above Average Reader
Note. 700+ – A speed reader	1 - 200 – A talker
300 - 700 – An above average reader	200 - 300 – An average reader

Table 5 shows that the grade 11 STEM students were classified as "Above Average Reader". The result of 360.19 indicates that they have developed a high-level reading speed and comprehension. This means that they were able to read quickly; they also understand and retain the information that they read.

According to Ehrlich and Rayner (2014), there is a trade-off between speed and accuracy in reading, as there is in all forms of behavior. Increasing the speed with which you encounter words, therefore, has consequences for how well you understand and remember the text. In some scenarios, it is tolerable and even advisable to accept a decrease in comprehension in exchange for an increase in speed. This may occur, for example, if you already know a lot about the material and you are skimming through it to seek a specific piece of information. In many other situations, however, it will be necessary to slow down to a normal pace in order to achieve good comprehension.

3.3. Correlation between the Level of Reading Interest and Speed Reading

This section described the relationship that exists between the level of learners' reading interest and the learners' speed reading. There are two procedures that must be passed in measuring reading speed. The first was measuring the reading speed and the second was measuring the reading comprehension. Then, both scores must be integrated to get an Effective Reading Rate (EER).

Table 6. Significant Relationship between The Learners' Reading Interest and Speed Reading

Variables	**N**	**Rho**	**p- value**	**Interpretation**
Reading Interest Speed Reading	205	0.7	0	*Positive Strong Correlation*

Table 6 shows that there was a strong correlation between reading interest and speed reading among grade 11 STEM students. The analysis yielded a p-value of 0 and a coefficient of 0.7. The p-value on the table of significance which is 5% is bigger than r (0.05<0); thus, there is strong evidence that the result is statistically significant. This constitutes that the null hypothesis (Ha) is rejected in favor of alternative hypothesis (Ho). In other words, the reading interest and speed reading among grade 11 STEM students are correlated.

Based on the statistical values, it can be indicated that students' level of reading interest strongly determines their speed reading. In other words, the learners' level of interest goes up alongside their level of speed reading and vice versa.

Several students and several teachers encounter problems at schools regarding students' lack of enthusiasm to read fast without compromising comprehension because of students' lack of interest, and poor reading habits. Students' interest in reading activities are still lacking, so students' awareness to carry out reading activities needs to be developed even further (Kurniati et al., 2023).

Conclusion

This section concludes the analysis of the result with the basis on the responses of 205 grade 11 STEM learners in a private institution in City of Koronadal, South Cotabato. The following conclusions were drawn: (1) The grade 11 STEM learners have a high level of interest in reading, may it be a newspaper, book, or magazine for academic and leisure purposes; (2) The grade 11 STEM learners could be classified as above average based on their effective reading rate, which means that they have low level of reading speed and comprehension; and (3) there is a positive strong correlation between the grade 11 STEM learners' level of reading interest and speed reading. It concludes that there is evidence that the level of reading interest and speed reading is correlated, implying that the relationship is statistically significant; hence, the study rejected the null hypothesis.

Recommendation

The findings of the study offer recommendations that carry significant implications for educational and institutions, focusing on the reading interest and speed reading of the learners.

Schools should conduct workshops focusing on developing metacognitive reading strategies. These sessions can enable students to set clear reading goals, assess their comprehension levels, and adjust their reading speed based on content. The aim is to develop a strategic and thoughtful approach to reading that goes beyond just making speed.

Teachers and language experts can incorporate speed reading activities directly into their reading tasks related to their subject matters and even topics. By incorporating reading-speed practices into curriculum, teachers can emphasize the importance of skilled reading in the broader curriculum. This integration allows students to use speed reading strategies in a variety of subjects.

Future researchers should examine more aspects of the relationship between reading interest and speed reading. They should consider conducting further investigations that classify learners according to subgroups which may determine possible variability in the relationship across different demographics, such as gender, socioeconomic status, or previous reading experiences.

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