

The Study of Correlation between Learning Styles: Visual, Auditory, Kinesthetic, and Reading Comprehension among Seventh-Grade Indonesian Middle School Students

Laila Nur Fitri, Martono, Kristiandi

English Education Department
Teacher Training and Education Faculty
Sebelas Maret University of Surakarta
email: lailaff@student.uns.ac.id

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Abstract

In teaching and learning reading, teachers have been using various teaching methods, teaching strategies, and learning approaches, but they do not know which one is suitable for students' learning. To fill this gap, this study examined the correlation between students' learning styles and reading comprehension in seventh-grade middle school students in Indonesia. This study used correlation methods to find the correlation between the two variables. The data on students' learning styles were collected through a document from the school which had been collected and analyzed by the Psychology Services Bureau in Indonesia. The data on students' reading comprehension were collected through a reading test based on reading competency standards by Depdiknas (2007). The researcher used a simple correlation analysis by Pearson's product moment in Microsoft Excel to find the correlation between learning styles and reading comprehension. The finding revealed a positive but low to moderate correlation between learning styles and students' reading comprehension with an r -value 0.2056 (0 to 0.3). Although the correlation is low, learning style still has a role in determining students' reading comprehension. Knowing that learning styles correlate with reading comprehension, this study suggests teachers and education providers be aware of learning styles and include analysis of students' learning styles in designing activities of teaching and learning reading that may be beneficial to help students develop reading comprehension.

Keywords: Correlation study, Pearson's product moment, seventh-grade, reading comprehension, learning styles

INTRODUCTION

Among the four skills of English: listening, speaking, reading, and writing, reading skill is considered to be the most important for students. It is because reading is an

essential skill for acquiring and comprehending information. Students acquire knowledge by reading textbooks, articles, and other learning materials that require them to use specific reading skills such as finding the main idea and topic, detecting explicit information, identifying implicit information, detecting specific references, and identifying form (Brown, 2004; Depdiknas, 2007). If they do not have sufficient skills for reading, they will not be able to understand the information contained in the text. Therefore, in order to have the students acquire reading skills, the teaching and learning of reading should be an in-depth and comprehensive process also carried out with an inclusive approach, taking into account the various learning styles and levels of students' reading skills.

However, in the reality of teaching and learning reading, teachers have been using various teaching strategies, teaching methods, and learning approaches, but they do not know which one is suitable for students learning. This condition is aligned with Zhou's (2011) statement that teachers spare no efforts to refine their teaching strategies and keep on informing students of various approaches, but they do not know which teaching strategy is suitable for students' learning. Therefore, to know which teaching strategy is suitable for students' learning, teachers need to know the analysis of students' learning styles or the way students prefer to acquire information (Kolb, 1984).

Analysis of students' learning styles is needed in teaching and learning reading. It is because learning styles can be used as predictors to identify early those students who are likely to become good readers (Price et al., 2010), namely students who prefer to learn visually or auditory or do not prefer to learn kinesthetically (Brown, 2007; Price et al., 2010). Students who prefer to learn visually or auditory may be exposed to reading earlier than others, and they may be responsive to the methods and environment that are available to them in the majority of conventional education systems (Price et al., 2010). In addition, Zhou (2011) states that analysis of students' learning styles is important for teachers because it helps teachers figure out teaching strategies that can be compatible with students' learning. Therefore, teachers need analysis of students' learning styles to refine their teaching strategies accordingly in teaching and learning reading.

Numerous previous studies have been conducted in the field of learning styles and reading. Rujani (2019) investigated the correlation between learning styles and reading comprehension. The study indicated there was a positive but low correlation between the two variables which concluded that students' learning style has only a minor effect on their reading skills. Banaruee et al. (2022) investigated the potential correlation between EFL learners' reading performance and their learning styles. The study results showed a positive correlation between synoptic learners and success in reading tasks, and learning styles can help teachers design activities in teaching and learning reading. The other study from Rogowsky et al. (2020) investigated the correlation between learning styles and reading comprehension. In contrast, the study found no significant positive correlation between learning styles and reading comprehension. All the previous studies investigated the correlation between the two variables whether there is a correlation. The results have relevance to this study which gives an assumption to be proved. Furthermore, those previous studies, in most cases, used questionnaires to identify students' learning styles.

Therefore, this study distinguishes itself to focus and investigate on the correlation between students' learning styles: visual, auditory, and kinesthetic, and reading comprehension by using a document of secondary data that had been collected and analyzed by the Psychology Services Bureau. The research focuses on answering the question: Is there any correlation between learning styles and reading comprehension in the seventh-grade of middle school students in Indonesia?

LITERATURE REVIEW

Theoretical Review

Reading Comprehension

Reading is an active process of comprehension (Grabe, 1991), where readers combine text information with background knowledge to build meaning (Anderson, 2003). Reading comprehension involves building mental representations of text messages, requiring cognitive skills and linguistic factors (Perfetti et al., 2005; Kintsch, 1998; Verhoven, 2010). Furthermore, in the learning process, reading comprehension involves learners understanding and interpreting information using their previous knowledge, cognitive ability, and linguistic knowledge.

Learning Styles

Learning style consists of two words: learning and style. Learning refers to the process of getting knowledge of a subject or a skill through study, experiences, or instruction (Brown, 2007). The process of getting knowledge itself occurs differently for different people at different times (Dunn & Burke, 2005). Style refers to an individual's preferred way of doing something. Hence, learning style is the way an individual prefers to process new information (Kolb, 1984).

In the context of learning, there are three types of learning styles described by Neuro-Linguistic Programming (NLP) as follows:

- a) Visual, prefer to learn by seeing.
- b) Auditory, prefer to learn by listening.
- c) Kinesthetic, prefer to learn by doing.

RESEARCH METHOD

This study used a correlational method under quantitative research to find the correlation between learning styles and reading comprehension. Kothari (2004) defines "correlation method" as a method that concerns the joint variation of two or more variables for determining the amount of correlation between two or more variables. The correlation study focuses on the possible relationship between two or more variables without any attempts to influence them (Fraenkel et al, 2022).

Research Context

This study was conducted in one of the middle schools which have been collaborating with a Psychology Services Bureau in Indonesia. The researcher took seventh-grade students as the population of this study. In order to get representative data, the researcher took a sample of 30% of the seventh-grade students by using a simple random sampling technique.

Data Collection

In collecting the data, the researcher used a document of secondary data and a reading test. The secondary data, which is the document from the school that had been collected and analyzed by the Psychology Services Bureau, was used to gather information on students' learning styles. The data on students' reading comprehension were collected through an objective test. The reading comprehension test consists of five reading indicators by Brown (2004) and reading competency standards by Depdiknas Indonesia (2007).

Data Analysis

After collecting the data, the researcher analyzed the data to verify whether students' learning styles and reading comprehension have a correlation or not. The researcher tested the hypothesis of this study by using Pearson's product-moment correlation analysis in Microsoft Excel to find the correlation between the two variables.

FINDINGS

This section contains the result of a simple correlation analysis between learning styles and reading comprehension. The correlation coefficient between the two variables is 0.2056. The correlation coefficient of each learning style is visual (0.2795), auditory (0.0589), and kinesthetic (0.3235). Therefore, it can be concluded that the r -value is not equal to 0, which means that the null hypothesis (H_0) is rejected, and there is a correlation between learning styles and reading comprehension. Furthermore, it indicated that the correlation between the two variables is positive but low to moderate correlation (0 to 0.3). The correlation analysis of the two variables can be seen in Table 1 and 2.

Table 1 Correlation Coefficient between Variable X and Y

<i>Reading Comprehension</i>	
Learning Style	0.2056

Table 2 Correlation Coefficient between Learning Styles and Reading Comprehension

<i>Reading Comprehension</i>	
Visual	0.2795
Auditory	0.0589
Kinesthetic	0.3235

DISCUSSION

Based on the results of the correlation coefficient, it was found that there is a positive but low to moderate correlation between learning styles and reading comprehension. The result is in line with the result of research conducted by Rujani (2019) which showed a positive but low correlation between learning styles and reading comprehension. Furthermore, it is also in line with the study of Banauree et al. (2022) which indicated a correlation between learning styles and success in reading.

Moreover, the researcher made the following observations upon further analysis of students' reading comprehension and learning styles. In this case, the types of teacher instructions and teaching strategies are related to the auditory and visual learning styles. Thus, this study found that visual and auditory learners perform better than kinesthetic learners in reading comprehension. The students' reading comprehension performance based on their learning styles can be seen in the table below:

Table 3 Students' Reading Comprehension Performance

No	Learning Styles	Reading Comprehension (Mean)
1	Auditory Learners	69
2	Visual Learners	68.4
3	Kinesthetic Learners	65.8

The findings are in line with Price et al.'s (2010) statement that learning styles can be used as predictors to identify early students who are likely to become good readers, specifically students who do not prefer to learn kinesthetically, and Brown's (2007) finding that the most successful learners have a high preference for visual and auditory learning styles, which they tend to use more frequently. Students who do not prefer kinesthetic learning prefer visual and/or auditory learning, which directly corresponds to the most common teaching and learning reading strategies (Price et al., 2010), for example, teaching and learning reading strategies that contain bottom-up and top-down reading models. Since such students respond positively to them, a traditional classroom may provide an environment that inadvertently allows such students to succeed. More importantly, since students who were not high achievers in reading preferred to learn kinesthetically, it would be possible if teachers provided these students with teaching and learning reading strategies using active body movement methods and other complementary resources, they might have become high reading achievers (Price et al., 2010).

CONCLUSION AND SUGGESTION

Considering the discussion of this study, it can be concluded that the results of this study and other studies have provided insight that learning styles could be one factor in affecting students' reading comprehension. The result of this study shows a positive but low correlation between learning styles and reading comprehension with an r -value 0.2056. Although the correlation is low, it still indicates that learning styles have a role in determining reading comprehension, and it could be one factor in affecting students' reading comprehension.

Knowing that learning styles correlate with reading comprehension, the result of this study can encourage teachers to include an analysis of students' learning styles in designing activities of teaching and learning reading. If the teachers already know the student's learning style or which learning the student prefers, it would be easy for teachers to design and choose appropriate teaching strategies for teaching and learning reading that match students' learning styles.

The current study only provides basic information regarding the correlation between learning styles and reading comprehension. Therefore, further research is expected to fully explore other factors related to influencing learning styles. The correlation between learning styles on other language abilities such as writing, listening, and speaking can be investigated.

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