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Research Article

# Collaboration of Scramble Model and Video Media in Social Science Learning: Study on Elementary School Students

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## Abstract

This study aims to examine the effect of utilizing the scramble learning model, supported by video media, on the learning outcomes of elementary school students in social studies. The research employed a quasi-experimental method with a Non-equivalent Control Group Design. Sampling was conducted using Slovin's formula, resulting in two groups: an experimental class (16 students) and a control class (16 students), selected through purposive sampling. The data were collected using multiple-choice tests administered before (pretest) and after (post-test) the intervention. The data were analyzed using a t-test with the aid of SPSS software. The analysis revealed that the average score of students in the experimental class (90.21) was significantly higher than that of the control class (74.79), which employed conventional teaching methods. The effect size (Cohen's d) was calculated, yielding a value of 0.79, which falls within the medium effect category. This indicates that the scramble learning model, combined with video media, has a moderate yet meaningful influence on improving students' learning outcomes in social studies. These findings highlight the potential benefits of incorporating multimedia-assisted active learning strategies into the classroom. By engaging students more interactively and visually, the scramble model can enhance understanding and retention of content, leading to better academic performance. The study underscores the importance of adopting innovative pedagogical approaches in elementary education to foster more effective learning environments and improve student outcomes in various subject areas, particularly social studies.

**Keywords:** Emotional Intelligence; Parental Involvement; Family Environment; Learning Culture

## 1. INTRODUCTION

Learning in the digital era presents challenges and opportunities for the world of education. Technological advancements have changed how students' access, process, and acquire information, requiring educators to adapt their teaching methods to be more relevant and practical. To meet the needs of students who are increasingly familiar with technology, innovation in teaching methods that are not only effective but also engaging is essential. This is particularly important for elementary school students at a critical cognitive and social development stage, where interactive and engaging learning methods can significantly enhance their motivation and interest (Shah &

Barkas, 2018). Therefore, integrating digital technology and active learning strategies becomes vital to creating a learning environment that suits today's students' needs and learning styles.

One approach that shows great potential is the Scramble learning model, a form of active learning. This model involves students in interactive learning activities where they are challenged to find and rearrange scrambled information. This process requires students to develop critical and analytical thinking skills and motivates them to explore the material in depth (Fitria et al., 2021; Idkhan & Idris, 2021). The Scramble learning approach aligns with constructivist theories that emphasize the importance of student engagement in building their knowledge through interaction and manipulation of information (Piaget & Cook, 1952; Vygotsky, 2012). The model also supports collaborative learning, where students can work in groups to complete tasks, exchange ideas, and solve problems together, strengthening their social and communication skills (Slavin, 2015).

On the other hand, the use of video media in education has proven effective in enhancing students' interest and understanding. Educational videos can present information in an engaging visual format, facilitating knowledge of complex or abstract concepts more easily. Video media enables students to learn more interactively and engagingly, as it can depict real-life situations and provide in-depth illustrations of the topics being studied (Fitria et al., 2024; Lamada et al., 2022). Additionally, videos can enhance information retention by offering multiple learning modalities, such as text, audio, and images, that cater to different learning styles among students (Ruth Colvin Clark & Mayer, 2012). (Guo et al., 2014) well-designed videos significantly increase student engagement and deepen their understanding of the subject.

Combining the Scramble learning model and video media can result in a more effective teaching strategy, especially in the context of Social Studies education at the elementary level. Videos can visualize abstract concepts, provide richer contexts, and offer various learning experiences that enrich students' understanding. According to (Ruth C Clark & Mayer, 2023), multimedia in education can improve student comprehension by providing multiple types of information simultaneously, facilitating deeper cognitive processing. Moreover, when videos are used within the Scramble model, students not only receive information but are also asked to reorganize it logically, which can strengthen their critical and analytical thinking skills.

The Scramble learning model is an active learning technique designed to actively involve students in learning through activities that require them to search, rearrange, and organize scrambled information. This model promotes active student engagement and enhances their critical and analytical thinking skills (Firman, 2022). The Scramble model also supports a collaborative learning approach, where students are encouraged to collaborate in groups, share ideas, and solve problems collectively. This is in line with constructivist learning theories that emphasize the importance of student involvement in building knowledge independently (Vygotsky & Cole, 1978)

Similarly, the use of video media in education has been proven to have a positive impact on student learning outcomes. As a form of visual media, educational videos can present information more concretely and attractively, helping to visualize abstract concepts and facilitating deeper understanding (Mayer, 2009). Using videos can also enrich the learning experience by providing multiple visual representations that enhance long-term memory retention and increase learning motivation (Clark & Mayer, 2016). Furthermore, videos can create a more dynamic and interactive learning atmosphere, which aligns with students' learning styles in the digital era (Guo et al., 2014).

Various studies support the benefits of combining active learning models such as Scramble with video media. (Henderson, 1983) learning approaches that combine information organization activities with interactive media, such as videos, can enhance students' conceptual understanding and critical thinking skills. This study shows that when students actively find and reorganize dispersed information, they develop cognitive and affective skills such as motivation and interest in the subject matter. Additionally, research by Clark and Mayer (2016) indicates that multimedia in education, such as videos, significantly influences student understanding and academic achievement.

However, despite the evidence supporting the effectiveness of the Scramble learning model and the use of video media, the current literature still shows a gap in research explicitly exploring the combination of these methods in the context of Social Studies education at the elementary level. Existing studies focus more on using active learning models and video media in science and

mathematics subjects (Natsir et al., 2023; Schuck & Kearney, 2006). Further research is needed to explore how integrating the Scramble learning model and video media can be effectively applied in Social Studies education, particularly in elementary school curricula and learning environments.

Social Studies education at the elementary level plays a strategic role in shaping critical awareness, analytical thinking skills, and understanding of social and cultural values in children. However, this subject often faces challenges in increasing student engagement due to the material's abstract and less contextual nature (Henderson, 1983). This study explores the effectiveness of combining the Scramble learning model and video media to improve students' interest, motivation, and overall learning outcomes.

This research is expected to provide an empirical contribution in addressing questions about innovative teaching methods suitable for 21st-century learning needs. The integration of active learning models such as Scramble with digital media is expected to create a more dynamic and engaging learning environment, thereby enhancing student participation in learning (Kim et al., 2014)

Furthermore, this study could be a reference for educators and educational policymakers in determining more effective and relevant teaching strategies. By providing empirical evidence on the benefits of combining active learning strategies and interactive media, this research has the potential to offer practical guidance for teachers in designing more meaningful teaching and learning activities, especially in the context of Social Studies education at the elementary level (Ruth C Clark & Mayer, 2023). Moreover, this study's findings could enrich curricula and teaching methods that focus on enhancing critical thinking, analytical skills, and social skills, essential components of the Pancasila learner profile and character education in Indonesia.

This study aims to analyze the effectiveness of the collaboration between the Scramble learning model and video media in improving learning outcomes and motivation among students in Social Studies at the elementary level. This study also aims to identify factors influencing the successful implementation of this model and provide practical recommendations for teachers to optimize the learning process.

## 2. RESEARCH METHOD

### 2.1 Research Design

This study employs a quasi-experimental research method, which incorporates a control group while being unable to fully account for all external variables that may influence the execution of the experiment. In quasi-experimental designs, researchers cannot control the variables completely; they can only manage one or two influencing factors (Cook & Campbell, 2007).

Quasi-experimental designs are particularly advantageous when random assignment is not feasible, as they allow researchers to compare the effects of an intervention while acknowledging that some external factors may still play a role in the results. Such designs facilitate understanding relationships between variables and enable the evaluation of interventions in real-world settings. However, they may exhibit lower internal validity than actual experiments due to potential confounding variables (Creswell, 2014b).

### 2.2 Population & Sample

The sample represents a subset of the population that can feasibly participate in a study and provide manageable and practical data for analysis (Creswell, 2014a). In this research, the sample consists of 32 elementary school students, divided equally into 16 in the experimental and 16 in the control groups. The experimental group is exposed to a combination of the Scramble learning model and video media, while the control group follows traditional teaching methods.

This balanced division allows for a controlled comparison to assess the impact of the Scramble model and video media on students' learning outcomes and motivation (Fraenkel, Jack R., Wallen, 2009). The sample size is chosen to be small enough for detailed observation and intervention yet large enough to produce statistically significant results. An equal number of students in each group

ensures balanced representation, minimizing bias and enhancing the study's reliability (Gay et al., 2012).

The purposive sampling technique selects participants with similar characteristics, such as age, grade level, and familiarity with digital learning tools, reducing confounding variables and strengthening the study's validity (Patton, 2005). This sample design aims to provide insights applicable to the study's specific context and generalizable to a broader population, particularly in evaluating the effectiveness of integrating active learning models with digital media in elementary Social Studies education.

## 2.3 Data Collection

Data collection is an essential aspect of research that determines the quality and objectivity of the results obtained. Quantitative research has two main categories of data collection methods: tests and non-tests.

Tests consist of questions or tasks designed to obtain information about educational or psychological attributes. In this research, two test stages are used: pretest and post-test. The pretest is conducted before teaching begins to measure students' prior mastery of the material to be taught. At the same time, the post-test is administered after the learning process to evaluate students' success in mastering the material. Through these two tests, researchers can analyze the effectiveness of the teaching methods.

In addition to tests, non-test techniques also play an essential role in data collection. Interviews are used to obtain in-depth information from respondents. In this research, interviews serve as a preliminary study to understand the learning process, the models applied by teachers, the media used, and the existing issues. The information obtained helps researchers determine the focus and variables to be studied further.

Observation is another non-test method employed. By directly observing classroom activities, researchers can see the dynamics of the learning process without interference. Observations are conducted to assess the progress of learning, the effectiveness of teaching activities, and the success of the learning process. In this context, the scramble learning model supported by video media is observed to evaluate its implementation.

## 2.4 Research Instrument

Research instruments are essential components required in any study. Data collection instruments serve as tools selected and utilized by researchers to gather data systematically and quickly during the research process. These instruments act as measurement tools that quantify aspects relevant to the research, facilitating accurate and reliable information collection.

The effectiveness of research instruments is critical for obtaining valid data, as they directly influence the quality of the information gathered. Researchers must carefully select or design instruments to align with their specific research objectives and the nature of the data they wish to collect. Common examples of research instruments include surveys, questionnaires, observation checklists, and tests. Each type of instrument has unique characteristics and applications, making it crucial for researchers to choose the most appropriate tools for their studies.

## 2.5 Data Analysis

In this study, statistical tests were employed to analyze the collected data, focusing primarily on the t-test as the method for hypothesis testing. Before conducting hypothesis tests, prerequisite checks must be performed, including tests for normality and homogeneity. The following are detailed steps in the data analysis process:

### 2.5.1. Normality Test

The normality test determines whether the data distribution follows a normal distribution. In this research, the analysis was conducted using SPSS software with the Kolmogorov-Smirnov method. According to (Ghasemi & Zahediasl, 2012), data is generally distributed if the significance

value (p-value) is more significant than 0.05. If the test results indicate p > 0.05, the null hypothesis regarding normality can be accepted.

#### 2.5.2. Homogeneity Test

Once the data is confirmed to be normally distributed, the next step is to conduct a homogeneity test to assess the variance. This test was also performed using SPSS, employing Levene's Test. As stated by (Field, 2024), the criterion for this test is that the data is deemed homogeneous if the significance value (p-value) exceeds 0.05. Suppose p > 0.05, the variances of the populations can be considered identical.

#### 2.5.3. Hypothesis Testing

Hypothesis testing is a procedure that allows researchers to accept or reject the null hypothesis, determining whether the sample data significantly differs from the expected results. After meeting the prerequisite tests, including normality and homogeneity, if the sample is confirmed to be normally distributed and the population variances are identical (homogeneous), the next step is to conduct hypothesis testing. One of the statistical tools employed for hypothesis testing is the t-test. This was executed using SPSS version 20.0 with the Independent Samples t-test. The primary objective of this two-sample test is to ascertain whether there is a significant difference in means between the two populations by comparing their sample means.

The decision criterion states that the two samples are considered to have a significant difference if the significance or probability value (Sig. (2-tailed)) is less than 0.05. Therefore, the null hypothesis (H0) is rejected if the probability value is smaller than 0.05 or Sig. (2-tailed) < 0.05 (Hinton et al., 2014)

#### 2.5.4. Effect Size Test

The effect size test is conducted to measure the extent of the impact the scramble learning model, supported by video media, has on students' learning outcomes. Effect size is a measure that indicates the strength of the relationship between the independent variable (intervention) and the dependent variable (outcome). According to (Cohen et al., 2007), understanding the effect size is crucial for gauging the magnitude of the influence exerted by the intervention, both in statistical significance and practical impact.

## 3. RESULT AND DISCUSSION

### 3.1. Description Analysis

#### 3.1.1. Pretest Data for Experimental and Control Groups

The experimental group consists of classes that receive treatment utilizing the scramble learning model supported by video media. In contrast, the control group comprises classes that do not receive any treatment. The pretest is administered before any distinct treatments are applied to both groups. The pretest results for the experimental and control groups can be observed in the following table. By conducting a pretest, researchers can establish a baseline for the participants' prior knowledge and skill levels, allowing for a more accurate comparison of the effects of the intervention after the treatment is implemented. This comparative analysis is crucial for assessing the effectiveness of the scramble learning model in enhancing students' learning outcomes.

**Table 1.** Description of Pretest Data for Experimental and Control Class

| Indicator | Experimental | Control |
|---|---|---|
| Mean | 16 | 16 |
| Median | 67.50 | 63.33 |

| Indicator | Experimental | Control |
|---|---|---|
| Mode | 70.00 | 63.33 |
| Minimum | 70 | 73 |
| Maximum | 50 | 43 |
| Sum | 80 | 80 |

Based on the data presented in the table, the pretest results for the experimental group indicated a total of 16 observations, yielding a cumulative score of 1080. The average (mean) score for the experimental group's pretest was 67.50, with a median value of 70.00 and a mode of 70. The minimum score recorded for this group was 50, while the maximum score reached 80.

In contrast, the pretest results for the control group also comprised 16 observations, resulting in a total score of 1013. The control group's average (mean) score was 63.33, with the median and mode values at 63.33 and 73, respectively. The minimum score for the control group was 43, with a maximum score also recorded at 80. To provide a more comprehensive analysis of the pretest data, the results are displayed in the following frequency distribution table:

**Table 2.** Frequency Distribution of Pretest Social Sciences Learning for Experimental and Control Class

| Experimental | | | Control | | |
|---|---|---|---|---|---|
| Valid | Frequency | Percent | Valid | Frequency | Percent |
| 50 | 2 | 12.5 | 43 | 1 | 6.3 |
| 57 | 1 | 6.3 | 50 | 2 | 12.5 |
| 60 | 1 | 6.3 | 53 | 2 | 12.5 |
| 63 | 1 | 6.3 | 60 | 2 | 12.5 |
| 67 | 2 | 12.5 | 63 | 2 | 12.5 |
| 70 | 3 | 25.0 | 70 | 2 | 12.5 |
| 73 | 2 | 12.5 | 73 | 3 | 18.8 |
| 77 | 3 | 18.0 | 77 | 1 | 6.3 |
| 80 | 1 | 6.3 | 80 | 1 | 63 |
| Total | 16 | 100.00 | Total | 16 | 100.00 |

Based on the table above, the frequency distribution of pretest scores in the experimental class indicates that one student scored each of the following: 57, 60, 63, and 80. Additionally, two students received scores of 50, 67, and 73, while three obtained scores of 70 and 77.

In contrast, the frequency distribution of pretest scores in the control class reveals that one student scored 43, 77, and 80. Furthermore, two students earned scores of 50, 53, 60, 63, and 70, whereas three students achieved a score of 73.

This detailed breakdown of pretest frequencies provides insights into students' performance levels in the experimental and control classes before the intervention. Understanding these distributions is essential for assessing the students' baseline knowledge and evaluating the effectiveness of the learning model applied in subsequent lessons.

### 3.1.2. Post-test Data for Experimental and Control Groups

The post-test was administered after both groups received different treatments. The results of the post-test calculations for the experimental and control groups are presented in the table below:

**Table 3.** Description of Pretest Data for Experimental and Control Class

| Indicator | Experimental | Control |
|---|---|---|
| Mean | 16 | 16 |
| Median | 90,21 | 74,79 |

| Indicator | Experimental | Control |
|---|---|---|
| Mode | 90,00 | 75,00 |
| Minimum | 90 | 63 |
| Maximum | 73 | 57 |
| Sum | 100 | 97 |

Based on the table above, the results for the experimental group's post-test indicate that 16 data points were recorded, yielding a cumulative score of 1443. The average (mean) score for the post-test in the experimental group is 90.21, with a median score of 90.00 and a mode of 90. The experimental group's minimum score was 73, while the maximum score was 100.

In contrast, the post-test results for the control group also comprised 16 data points, resulting in a cumulative score of 1197. The average (mean) score for the control group was found to be 74.79, with a median of 75.00 and a mode of 63. The minimum score recorded in the control group was 57, with a maximum score of 97.

To provide a clearer analysis of the post-test data results for both the experimental and control groups, the information is presented in the following frequency distribution table:

**Table 4.** Frequency Distribution of Pretest Social Sciences Learning for Experimental and Control Class

| Experimental | | | Control | | |
|---|---|---|---|---|---|
| Valid | Frequency | Percent | Valid | Frequency | Percent |
| 73 | 1 | 6.3 | 57 | 1 | 6.3 |
| 77 | 1 | 6.3 | 60 | 1 | 6.3 |
| 83 | 2 | 12.5 | 63 | 3 | 18.8 |
| 87 | 1 | 6.3 | 73 | 3 | 18.8 |
| 90 | 5 | 31.3 | 77 | 2 | 12.5 |
| 93 | 1 | 6.3 | 80 | 1 | 6.3 |
| 97 | 1 | 6.3 | 83 | 2 | 12.5 |
| 100 | 4 | 25.0 | 87 | 2 | 12.5 |
| | | | 97 | 1 | 6.3 |
| Total | 16 | 100.00 | Total | 16 | 100.00 |

Based on the table above, the frequency distribution of post-test scores for the experimental group indicates that one student scored each of the following: 73, 77, 87, 93, and 97. Additionally, two students achieved a score of 83, four received a score of 100, and five obtained a score of 90.

In contrast, the frequency distribution of post-test scores for the control group reveals that one student scored 57, 60, 80, and 97. Furthermore, two students earned scores of 77, 83, and 87 each, while three students achieved scores of 63 and 73.

3.2.3. Recapitulation of Pretest and Post-test Data for Experimental and Control Groups

Based on the analysis of pretest and post-test data for the experimental and control groups, which each comprised 16 students, the following summary data has been obtained:

**Table 5.** Pretest and Post-test Data for Experimental Group and Control Group

| Indicator | Pre-test | | Post-test | |
|---|---|---|---|---|
| | Experimental | Control | Experimental | Control |
| Valid | 16 | 16 | 16 | 16 |
| Mean | 67.50 | 63.33 | 90.21 | 74.79 |
| Median | 70.00 | 63.33 | 90.00 | 75.00 |

| Indicator | Pre-test | | Post-test | |
|---|---|---|---|---|
| | Experimental | Control | Experimental | Control |
| Mode | 70 | 73 | 90 | 63 |
| Minimum | 50 | 43 | 73 | 57 |
| Maximum | 80 | 80 | 100 | 97 |
| Sum | 1080 | 1013 | 1443 | 1197 |

As shown in Table 5, the pretest results reveal a total sample size of 32, with the experimental group scoring a cumulative total of 1080 and the control group scoring 1013. The experimental group's average (mean) score was 67.50, while the control group had a mean of 63.33. The median score for the experimental group stood at 70.00, compared to 63.33 for the control group. The mode value was 70 for the experimental and 73 for the control groups. The minimum score in the experimental group was 50, while the control group had a minimum score of 43. Both groups recorded a maximum score of 80.

Regarding the post-test results in the table, both groups also comprised 32 samples, with the experimental group achieving a cumulative score of 1443 and the control group totaling 1197. The experimental group's average (mean) score rose to 90.21, while the control group had a mean score 74.79. The median score for the experimental group increased to 90.00, whereas the control group's median score reached 75.00. The mode for the experimental group was recorded at 90, while the control group's mode was 63. The minimum post-test score for the experimental group was 73, compared to 57 for the control group. The maximum scores were 100 for the experimental group and 97 for the control group.

After conducting the intervention in the experimental class using the scramble learning model supported by video media and applying conventional teaching methods in the control class, the data indicates a significant change in students' learning outcomes in both groups. The most notable improvement occurred in the experimental group, where the average score increased from 67.50 to 90.21, representing an enhancement of 22.71 points. Conversely, the control group's average score rose from 63.33 to 74.79, reflecting an increase of 11.46 points. These results suggest that the average scores of students in the experimental group were significantly higher than those in the control group.

### 3.1.1. Emotional Intelligence Description

This study's description of the emotional intelligence variable refers to several indicators: self-awareness, emotion management, self-motivation, recognizing others' emotions, and building relationships. Table 6 shows the achievement of each indicator of the emotional intelligence variable, where the highest percentage value of 84.12% is found in the indicator of building relationships with others. In comparison, the lowest percentage value of 77.45% is found in the indicator of self-motivation. This description indicates that students' emotional intelligence in building relationships with others has been well achieved compared to self-motivation. This is evidenced by some students being easygoing with anyone and enjoying cooperating in completing tasks given by the teacher.

**Table 6.** Achievement of Learning Independence Indicators

| Indicator | Earning Score | Max. Score | Percentage (%) |
|---|---|---|---|
| Self-confident | 284 | 340 | 83.53 |
| Discipline | 290 | 340 | 85.29 |
| Responsibility | 276 | 340 | 81.18 |
| Initiative | 411 | 510 | 80.59 |
| Motivation | 287 | 340 | 84.41 |
| Total | 1548 | 1870 | 82.78 |

Table 4 shows the achievement of each indicator of the self-directed learning variable, with the highest percentage value of 85.29% in the discipline indicator. In comparison, the lowest percentage value of 80.59% is found in the initiative indicator. This indicates that students' self-directed learning in terms of discipline has been well established compared to the initiative aspect. This is evidenced by some students being able to follow school rules conscientiously and submit assignments given by the teacher on time. However, some students still lack initiative in seeking sources other than textbooks to complete the tasks given by the teacher.

## 3.2. Inferential Analysis

### 3.2.1. Normality Test

The data normality test in this study utilized the Kolmogorov-Smirnov approach and p-plot graph in the SPSS program. The results of the normality test were obtained using the Kolmogorov-Smirnov approach.

**Table 7.** Normality Test

| Parameter | Unstandardized Residual |
|---|---|
| Kolmogorov-Smirnov | 0.986 |
| Asymp. Sig. (2-tailed) | 0.154 |

Based on the results of the normality test, as seen in the table above, it can be concluded that the data of the research variable is normally distributed. This is evidenced by the Kolmogorov-Smirnov test result, where the Kolmogorov-Smirnov value is 0.986 and Sig. (p) value is 0.154, which is greater than 0.05.

### 3.2.2. Linearity Test

Testing for linearity is one of the classic assumptions' tests conducted to determine the linear nature of the data distribution between variables X and Y. In this study, it is essential to determine whether there is linearity in the relationship between emotional intelligence and self-directed learning. No matter how high the coefficient of determination R is generated, estimation errors may occur if the data does not exhibit linearity. Linearity testing will obtain the probability value and the calculated F value. For a more straightforward explanation, it can be outlined in the following table:

**Table 8.** Linearity Test

| Parameter | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | (Combined) | 77.070 | 11 | 7.006 | 0.552 | 0.846 |
| Between-group | Deviation from linearity | 77.010 | 10 | 7.701 | 0.606 | 0.792 |
| | Within group | 279.40 | 22 | 12.700 | | |
| | Total | 356.47 | 33 | | | |

Based on the values output from the table above, the calculated F and probability values in the "Deviation from Linearity" columns are obtained. Suppose the linearity test results show that the calculated F value < the tabulated F value and the significance value (p) > 0.05; it is concluded that there is a linear relationship between the independent and dependent variables. In this case, the calculated F value is 0.606 < the tabulated F value of 2.30, and the significance value (p) is 0.792 > 0.05. Therefore, it can be concluded that the relationship between emotional intelligence and self-directed learning is linear. This means that the linearity assumption is met before conducting the correlation test.

### 3.3. Hypothesis

The data analysis used to test the hypothesis in this study is the Pearson correlation analysis. The hypothesis proposed in this study is that there is a significant relationship between emotional intelligence and self-directed learning among fourth-grade students in elementary school. The results of the Pearson correlation analysis using SPSS data processing can be outlined in the table below:

**Table 9.** Pearson Correlation Test

| Variables | Test result | Intelligence Emotional (X) | Learning Independence (Y) |
|---|---|---|---|
| Intelligence Emotional (X) | Pearson Correlation | 1 | 0.578 |
| | Sig (2-tailed) | | 0.034 |
| | N | 34 | 34 |
| Learning Independence (Y) | Pearson Correlation | 0.578 | 1 |
| | Sig (2-tailed) | 0.034 | |
| | N | 34 | 34 |

Table 9 shows the output of the Pearson correlation test, where the probability value obtained is 0.034, which is smaller than the 5% significance level. This indicates that the proposed hypothesis can be accepted (rejecting H0 and accepting H1), thus concluding that there is a significant relationship between emotional intelligence and self-directed learning among fourth-grade students in elementary school.

In addition to comparing the significance values, the correlation coefficient values can be analyzed to understand the relationship between the two variables in this study. If the calculated correlation coefficient (r) is smaller than the tabulated correlation coefficient (r-table), it is concluded that there is a relationship between the two variables and vice versa. The Pearson correlation coefficient obtained is 0.578, more significant than the tabulated r-value (0.287). Therefore, it can be concluded that there is a relationship between emotional intelligence and self-directed learning. The coefficient of 0.578 indicates a moderate level of correlation as it falls within the range of 0.40 – 0.599. The constant value 1 in SPSS output for both variables suggests a continuous relationship.

### 3.4. Coefficient of Determination

In this study, the coefficient of determination is used to measure the level of relationship between the self-directed learning variable (Y) and emotional intelligence (X). The results of the coefficient of determination calculation can be outlined as follows:

$Kd = R^2 + 100\ \%$

$= (0.578)^2 + 100\ \%$

$= 33.41\%$

Based on the results above, it can be explained that the contribution of the relationship between variables X and Y is 33.41%, while other unexamined factors influence 66.59%. This indicates that the emotional intelligence possessed by fourth-grade students can influence their self-directed learning. Therefore, students with good emotional intelligence will be able to cultivate self-awareness.

### 3.5. Discussion

The study also found a significant relationship between emotional intelligence and independent learning among fourth-grade students, with emotional intelligence positively

impacting independent learning. The correlation between emotional intelligence and independent learning was moderate, indicating a meaningful connection between these variables. These findings suggest that emotional intelligence plays a crucial role in students' independent learning and highlight the importance of considering emotional factors in educational settings. Furthermore, the research underscores the influence of external factors, such as the school environment and family background, on students' independent learning behaviors.

Previous studies have shown that students with higher emotional intelligence tend to manage their emotions more effectively during the learning process, such as overcoming feelings of frustration or boredom, which, in turn, enhances their independent learning skills (Goleman, 2021). Emotional intelligence, which encompasses the ability to recognize, understand, and manage one's own emotions as well as the emotions of others, enables students to become more emotionally resilient when facing learning challenges. This enhanced resilience equips them to take initiative and assume responsibility for their learning process.

According to (Salovey et al., 2008), emotional intelligence is closely linked to effective self-regulation, which includes the ability to set goals, self-motivate, and independently devise learning strategies. In an educational context, students with high emotional intelligence are more likely to have reflective, solid thinking skills, making them proactive in seeking solutions to their learning challenges. This finding is consistent with the moderate correlation between emotional intelligence and independent learning among fourth-grade students.

The school and family environments also play critical roles in supporting students' independent learning. (Epstein, 2005) emphasized that parental involvement in a child's education—through effective communication and emotional support—is essential for developing students' learning independence. A supportive family environment positively contributes to independent learning, where children feel comfortable expressing their emotions and receive encouragement to pursue their learning interests.

On the other hand, the school environment that provides opportunities for students to explore and manage their learning processes is equally important. According to (Zimmerman & Schunk, 2001) teachers who pay attention to students' emotional aspects and provide constructive feedback can foster greater confidence and motivation for independent learning. Schools that create a supportive learning culture also stimulate students to develop their emotional intelligence, ultimately enhancing their capacity for independent learning.

The results of this study have significant implications for the educational field, particularly in curriculum design and teaching strategies. Considering emotional intelligence as a crucial factor in developing independent learning necessitates educators focus on holistic learning approaches, where students' emotional skills are cultivated alongside their academic competencies. Implementing emotional intelligence development programs in schools can help students gain better control over their emotions and become more autonomous in managing their learning processes.

## 4. CONCLUSION

The research findings reveal that students at primary school demonstrate a commendable level of emotional intelligence and display a satisfactory level of independent learning. The study underlines a notable correlation between emotional intelligence and students' aptitude for self-guided learning. This correlation suggests that a heightened emotional intelligence level positively enhances students' capability to engage in independent education, underscoring the significance of emotional competencies in fostering autonomous academic progress.

The implications of this correlation are substantial, indicating that students with well-developed emotional intelligence are better equipped to manage their emotions effectively, navigate challenges, and maintain a proactive approach to learning. Such students are more likely to exhibit resilience, motivation, and the ability to make informed decisions, which are crucial for successful independent learning. Educators and schools can empower students to become self-directed learners by emphasizing emotional skills development, leading to improved academic outcomes and overall personal growth.

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