

The Relationship of Students' Initial Ability and Emotional Intelligence with Learning Outcomes

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ABSTRACT: *This study aims to determine the relationship between initial abilities and emotional intelligence with student learning outcomes. This study uses a quantitative approach with a survey method and correlational analysis techniques. The study population consisted of 120 PGMI students of the 2022/2023 intake. The study population of students of the 2022/2023 intake was 120 students. The results of this study were processed using regression analysis techniques of simple correlation, partial correlation, regression, and multiple correlation. The study found that there was a positive and significant correlation between (a) Initial abilities (X1) and learning outcomes (Y) with $\hat{Y} = 7.93 + 1.938 X1$ and $r_{y1} = 0.798$; (b) emotional intelligence (X2) and learning outcomes (Y) with $\hat{Y} = 18.94 + 0.186X2$ and $r_{y2} = 0.90$. So it is known that there is a positive relationship between initial ability (X1) and emotional intelligence (X2) with student learning outcomes (Y) with $\hat{Y} = 21.1 + 0.103 X1, +0.33X2$ and a correlation coefficient of $r_{y12} = 0.87$. This study is limited to PGMI students of the 2022/2023 intake at one institution with a correlational design, so it cannot be generalized and does not show a causal relationship. In addition, other factors such as learning motivation and environment were not analyzed. This study combines initial ability and emotional intelligence as predictors of learning outcomes in the PGMI context, resulting in a multiple regression model with a strong correlation that can be used as a basis for developing educational strategies.*

Penelitian ini bertujuan untuk mengetahui adanya hubungan antara kemampuan awal, kecerdasan emosional dengan hasil belajar mahasiswa. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei dan teknik analisis korelasional. Populasi penelitian terdiri dari 120 mahasiswa PGMI angkatan 2022/2023. Populasi penelitian mahasiswa angkatan 2022/2023 adalah 120 mahasiswa. Hasil penelitian ini diolah menggunakan teknik analisis regresi hasil korelasi sederhana, korelasi parsial, regresi dan korelasi berganda. Penelitian mendapatkan hasil bahwa ada korelasi positif dan signifikan antara; a) Kemampuan awal (X1) dan hasil belajar (Y) dengan $\hat{Y} = 7,93 + 1,938 X1$ and $r_{y1} = 0,798$; b) kecerdasan emosional (X2) dan hasil belajar (Y) dengan $\hat{Y} = 18,94 + 0,186X2$ and $r_{y2} = 0,90$. Sehingga diketahui bahwa terdapat hubungan positif antara kemampuan awal (X1) dan kecerdasan emosional (X2) dengan hasil belajar mahasiswa (Y) dengan $\hat{Y} =$

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21,1 + 0,103 X1, +0,33X2 dan koefisien korelasi sebesar $r_{y12} = 0,87$. Penelitian ini terbatas pada mahasiswa PGMI angkatan 2022/2023 di satu institusi dengan desain korelasional, sehingga tidak dapat digeneralisasi dan tidak menunjukkan hubungan kausal. Selain itu, faktor lain seperti motivasi belajar dan lingkungan tidak dianalisis. Studi ini menggabungkan kemampuan awal dan kecerdasan emosional sebagai prediktor hasil belajar dalam konteks PGMI, menghasilkan model regresi ganda dengan korelasi kuat yang dapat digunakan sebagai dasar pengembangan strategi pendidikan.

Keywords: *Initial Abilities, Emotional Intelligence, Learning Outcomes, Regression Analysis.*

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I. INTRODUCTION

Education is a conscious and planned effort to produce competent individuals. Education is one way to improve the quality of human resources throughout the world (Fajartriani et al., 2024). Based on this, education is essential for human life. Education can produce competent individuals through learning activities carried out in the classroom (Amanda et al., 2025). These competencies will be used for future needs as one of a person's skills. Through learning activities, students are taught about abstract things so that they become something concrete (Sari et al., 2023).

Learning is an activity of studying something so that changes occur in students, both positive and negative changes (Wulandari & Nurhaliza, 2023). These changes are reflected and can be seen in students' daily behavior. Learning is an activity that can be done at any time. By learning, all knowledge, skills, attitudes, and character competencies will be formed and developed (Huseng et al., 2025). Learning can be said to be a person's provision to stay alive and preserve their lives through the competencies they have obtained from learning outcomes (Oktaviani et al., 2020). Learning outcomes are the products of learning activities in the form of values. As is well known, Indonesia is still struggling with low student learning outcomes. This is evidenced by the results of the PISA test in 2018 which stated that Indonesia experienced a decline in test scores in literacy, mathematics, and science skills. In addition, based on interviews conducted with teachers, who stated that there are still problems in obtaining learning outcomes in schools, the low learning outcomes of students can have an impact on the low quality of education in Indonesia. Many factors influence student learning success, including internal factors (factors from within), external factors (factors from outside), and learning approach factors. Intelligence, attitude, talent, interest, motivation, and personality of students are internal variables that can influence student learning outcomes (Samsudin, 2020).

Other international organizations express this, such as the International Educational Achievement (IEA) reports that the reading ability of elementary school students (*Sekolah Dasar/SD*) in Indonesia is in 38th place out of 39 countries surveyed. Meanwhile, the Third Trends in International Mathematics and Science Study (TIMSS), an institution that measures educational outcomes around the world, reported that the mathematics abilities of junior high school students (*Sekolah Menengah Pertama/SMP*) are in 34th place out of 38 countries, while the ability of Science Natural Science (*Ilmu Pengetahuan Alam/IPA*) is in 32nd place out of 38 countries. This data illustrates that

the condition of our education is in an inferior position endangering the survival of the nation, this data is foundation in the development of educational human resources in the future, especially for Educational Personnel Education Institution (*Lembaga Pendidikan Tenaga Kependidikan/LPTK*) institutions that prepare teaching staff, in general, specifically study program that produces teaching staff in Primary Schools and Madrasah Ibtidaiyah.

The current education system is only capable of creating a class of Indonesian people coolies, or domestic servants. The education system has so far only been able to produce graduates who are not ready to face the work environment (Anjarwati & Juliprijanto, 2021). This can be proven by the still high rate of educated unemployment in Indonesia, which comes from upper levels of education or even universities. Indonesia is still facing significant challenges in its education system. The main problem that stands out is the high level of educated unemployment, especially among university graduates. According to BPS data as of August 2022, the national open unemployment rate reached 5.86%, and around 673 thousand unemployed people are university graduates (7.99% of the total unemployed). This situation shows that there is a real gap between the education curriculum and the needs of the world of work. Really it's worrying, our educational portrait is indeed crucial. That said, significant national progress can only be achieved through education. Therefore, if this big country wants get out of backwardness and decline in human resources, then the top officials the Government must have a sincere conscience and be committed to the education sector made the action agenda and foremost priority in building the nation and has been it's time for the mandate of the 1945 Constitution which requires 20% of the APBN for The education budget needs to be implemented in real terms.

In learning activities, the first thing that must be considered is the condition of the participants' education. The teacher diagnoses the student's previous condition and knowledge material is provided. With that knowledge, the teacher can follow up according to existing conditions. What the teacher needs to know is: students' initial abilities (Safitri et al., 2022). According to Wardah et al. (2025), the initial ability refers to the information to be learned that students already know through the results of previous learning and individual experience. According to Wulandari et al. (2024), initial abilities are a set of skills that students must have before they follow the new learning process. Based on the explanation in above, initial abilities are learning outcomes obtained before proceeding to the next level and is the basic capital for students to and is students' basic capital to know each new lesson material that will be presented by the teacher.

Furthermore, in learning activities, there is interaction between lecturers and students, between students and female students, and all other components involved, there is contact with learning materials and others. This interaction requires a stable and conducive emotional condition to achieve maximum good results (Amelia et al., 2021). Emotional maturity determines success (Kumar & Mishra, 2016). With words on the other hand, emotional intelligence has an enormous contribution in achieving a goal or success, including achieving maximum learning at University.

Research conducted by Srivastava & Jaiswal (2022), regarding competencies, the actual thing that makes people successful in any job, proves that IQ indeed ranks second after deep emotional intelligence determines the achievement of peak performance in work. More emotional intelligence refers to self-awareness and the ability to control emotions.

Because if emotions cannot be recognized, people will quickly get angry, while the attitude will be angry, turning off the reasoning and intellectual working system, which can result in IQ dysfunction, and the work of reason is the organization of thoughts involving propositions, corresponding to a conclusion that is needed in the effort to master the material taught.

Emotions are an essential factor in driving something we want to do, in one study, elementary schools that had IQ scores above average had (Mardiyanti, 2023). It turns out through neuropsychological tests that it has a deformed frontal cortical function. They also have lowered impulses and are easily anxious. Despite Their intellectual abilities are high, they are children at risk highest facing difficulties such as academic failure, based on those prospective elementary school education teachers and ibtidaiyah, must be early in college to realize it, as well as to become more aware of oneself brilliant in lectures and more creative and active after becoming a teacher at school elementary/madrasah. That's a picture of how critical emotional abilities are, so for the author, the emotional intelligence variable is the main thing examined in this research, with the theme of the relationship between initial skills of students and emotional intelligence with madrasah ibtidaiyah teacher education student learning outcomes Bima Muhammadiyah University, West Nusa Tenggara.

II. METHOD

This research uses Mixed Methods Research is a combination of quantitative and qualitative methods (or vice versa) in a study (Taherdoost, 2022). This method is used to make the research better, complete and comprehensive. The type of Mixed Methods Research used in this method is a multimode design with Kuan-Kual (Simultaneous) deductive direction (Justan et al., 2024). A multimode design with Kuan-Kual (simultaneous) deductive direction is research with a quantitative main. Qualitative descriptions in several specific aspects complement it (Dawadi et al., 2021).

This research was carried out on students majoring in teacher education Madrasah Ibtidaiyah, Faculty of Islamic Religion, Bima Muhammadiyah University in Bima Regency, West Nusa Tenggara Province, it is planned to be implemented in semester III and semester V of the 2022 and 2023 academic years because the location provides an opportunity for students to directly understand the educational context in the Madrasah Ibtidaiyah environment, which is the primary focus of their studies. By conducting research in Bima Regency, students can observe and analyze learning practices, curriculum, and challenges faced by teachers and students at the elementary level, especially in the context of the Islamic religion. This will enrich their theoretical understanding with relevant empirical experiences.

The implementation of research in semesters III and V is designed to provide continuity between theoretical learning in class and practical application in the field. In semester III, students can start with field observation and introduction. In contrast, in semester V, they can continue with more in-depth research, such as program evaluation or development of learning models. Thus, the selection of this research location not only supports the achievement of students' academic competence but also contributes to the development of Madrasah Ibtidaiyah education in Bima Regency in a more holistic manner.

The population in this study was students of the Madrasah Ibtidaiyah Teacher Education Faculty Department, FAI, UM Bima. As many as 120 active students, in two third-semester cohorts and V, because the number of students is affordable, this research is population research, and no sample is required.

The research uses one instrument and two factual data sources: 1) an Instrument questionnaire to measure emotional intelligence, and 2) Factual data taken from students' initial entrance exam scores to determine their initial abilities and the results of student learning, semester exam results.

First, Student learning outcome variables. Learning outcome data is obtained using factual data, namely data documentation of student learning outcomes for each semester passed in the form of GPA, students in the two periods of the class of 2022 and 2023. Second, Initial ability variable. This variable filters data using factual data, namely data documentation, which is data on student entrance exam scores for two class periods in 2022 and 2023. Third, Emotional intelligence variable. Emotional intelligence is the ability to process information emotionally, especially in the form of perception, assimilation, understanding, and information management. Thus, emotional intelligence includes four indicators of mental ability, namely 1) self-awareness and emotional expression, 2) thoughts supported by emotional facilities or self-regulation, 3) motivation, and 4) managing emotions in life (social skills).

The emotional intelligence instrument uses a Likert scale consisting of 35 items. Each instrument item consists of a group of 5 statements with alternative answers. That is, strongly agree, agree, doubtful, no agree, and strongly disagree. In this study, only positive statements were used; each alternative answer had one of the following: Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, and Strongly Disagree = 1. No negative statements were used.

The data in this research is data taken from the sample in the form of total values obtained for each semester in the form of GPA, for ability data, students obtained from student entrance exam scores, intelligence data, and emotional score is obtained from the score obtained from the instrument in the form of a questionnaire on emotional intelligence.

Quantitative data is numeric and structured, aimed at measuring variables and testing hypotheses (Sofwatillah et al., 2024). Quantitative data collection is usually done with standardized instruments to ensure objectivity and accuracy (Siregar, 2021). One of the most common methods is a survey or questionnaire, where researchers compile a list of closed-ended questions (such as multiple choice, Likert scale, or rating) that are distributed to respondents (Dhewy, 2022). Surveys can be conducted online, by telephone, or face-to-face, depending on the needs of the research. In addition, experiments are also often used in quantitative research, where researchers manipulate one or more independent variables to observe their effect on the dependent variable. Data is collected by measuring the results of the experiment using valid and reliable tools or instruments. Another method that is often used is systematic observation, where researchers observe and record behavior or phenomena in a structured manner, usually with the help of a checklist or measuring instrument (Rudiyanti et al., 2025). Finally, documentary studies can also be used to collect quantitative data from secondary sources, such as statistical reports, databases, or existing official records (Thalib, 2022).

Qualitative data is descriptive and more subjective, aiming to understand the meaning, experience, or perspective of individuals (Salam, 2022). Qualitative data collection is

usually more flexible and open, allowing researchers to dig deeper into information. One of the primary methods is the in-depth interview, where the researcher has an open conversation with respondents to gain information about their experiences, opinions, or perspectives (Nurhayati et al., 2024). Interviews can be conducted face-to-face or over the phone, and are usually recorded for analysis purposes. Another method that is often used is the Focus Group Discussion (FGD), where a group of people is brought together to discuss a particular topic under the guidance of a moderator (Akyıldız & Ahmed, 2021). FGDs allow researchers to observe the interactions and dynamics of the group as they discuss an issue (Mwita, 2022). In addition, participant observation is also an effective method, where the researcher is directly involved in the activity or environment being studied to observe and record behaviors, interactions, or phenomena in their natural state. Case studies are another method often used in qualitative research, where researchers study a case in depth by collecting data from a variety of sources, such as documents, interviews, and observations. Finally, document or content analysis can be used to analyze text, images, or recordings to understand the meaning or themes that emerge (Purwanza, 2022).

The data that has been collected is then analyzed by: First, Descriptive analysis. Descriptive analysis is data analysis on each variable (Cristina, 2024). The calculation results are then described in a frequency list for each variable. Second, Inferential analysis. Inferential analysis in this research is used to test hypotheses and generalizations of test results in the form of a t-test, ANOVA, or linear regression to test the relationship or differences between variables. For testing the first hypothesis and secondly, simple regression and correlation analysis techniques are used; meanwhile, for the third hypothesis, testing was carried out using these techniques. Multiple correlation regression analysis is then continued by calculating the partial correlation coefficient. Before testing the hypothesis, it is necessary to test the analysis requirements, namely the normality test of the estimated standard error of Y over X1 and X2, which is known as the Lilliefors test and Bartlett's test.

The statistical hypothesis proposed in this research is as follows:

- $H_0 : \rho_{Y^1} = 0$
 $H_1 : \rho_{Y^1} > 0$
If it is greater than 0, it means the correlation value on the graph is pointing upwards
- $H_0 : \rho_{Y^2} = 0$
 $H_1 : \rho_{Y^2} > 0$
If it is greater than 0, it means the correlation value on the graph is pointing upwards
- $H_0 : \rho_{Y^{.12}} = 0$
 $H_1 : \rho_{Y^{.12}} > 0$
If it is greater than 0, it means the correlation value on the graph is pointing upwards

Information:

- ρ_{Y^1} = Correlation coefficient between initial abilities and learning outcomes student
- ρ_{Y^2} = Correlation coefficient between emotional intelligence and results student learning
- $\rho_{Y^{.12}}$ = Correlation coefficient between initial ability and intelligence

emotional about student learning outcomes.

III. RESULT AND DISCUSSION

Data Description

1. Student Learning Results

Data on student learning outcomes totaling 120 pieces. Based on the results calculations, obtained an average value of 21.51, mode 23, 15, median 22, 45 and standard deviation 4.296. Empirically, the lowest score is 8 and the highest score is 282. The lowest theoretical score range that a respondent may achieve is 0, and the highest score is 40. The distribution of student learning outcome variable scores is in the form. The frequency distribution table appears in the following table.

Tabel 1. Frequency distribution of student learning outcome score

| No | Interval Class | Frequency Absolute | Frequency Relative (%) | Frequency Cumulative (%) |
|----|----------------|--------------------|------------------------|--------------------------|
| 1 | 7 - 9 | 1 | 0,83 | 0,83 |
| 2 | 10 - 12 | 4 | 3,33 | 4,16 |
| 3 | 13 - 15 | 8 | 6,67 | 10,83 |
| 4 | 16 -18 | 11 | 8,33 | 19,16 |
| 5 | 19 - 21 | 27 | 20,00 | 39,16 |
| 6 | 22 - 24 | 38 | 34,17 | 73,33 |
| 7 | 25 - 27 | 26 | 22,50 | 95,83 |
| 8 | 38 - 40 | 5 | 4,17 | 100,00 |
| | Total | 120 | 100 | |

A total of 46 (37.13%) respondents were in the average group, 24 (19.16%) were below average and 50 (43.71%) respondents were above average group.

2. Students' Initial Abilities

Students' initial abilities are taken from the entrance exam results. Based on the calculation results, the average variable score value is student = 7.04, mode = 6.6885, median = 6.88; and standard deviation 0.94.3. Empirically, the lowest possible score is 4.68, and the highest score is 9.30. The range of the lowest theoretical score is 0, and the highest is 10. Frequency distribution of scores. The initial abilities of students who have been grouped can be seen in the following table.

Tabel 2. Frequency distribution of students' initial ability scores

| No | Interval Class | Frequency Absolute | Frequency Relative (%) | Frequency Cumulative (%) |
|----|----------------|--------------------|------------------------|--------------------------|
| 1 | 4,61 - 5,20 | 3 | 2,50 | 2,50 |
| 2 | 5,21 - 5,80 | 6 | 5,00 | 7,50 |
| 3 | 5,81 - 6,40 | 19 | 13,33 | 20,83 |
| 4 | 6,41 -7,00 | 38 | 35,83 | 56,66 |
| 5 | 7,01 - 7,60 | 17 | 12,50 | 69,16 |
| 6 | 7,61 - 8,20 | 26 | 21,67 | 90,83 |
| 7 | 8,21 - 8,80 | 5 | 4,17 | 95,00 |
| 8 | 8,81 - 9,40 | 6 | 5,00 | 100 |
| | Total | 120 | 100 | |

A total of 8 (6.20%) respondents were in the average group, 66 (53.66%) respondents were below the average group and as many as 46 (40.14%) respondents are above the average group.

3. Students' Emotional Intelligence

The number of students' emotional intelligence data entered was 120. Based on the calculation results, the average value of the variable score is obtained as students' emotional intelligence 115.2, mode 117.26, median 115.94, and standard deviation 11.46. Empirically the lowest score is 92 and the highest score is 139. The range of the lowest possible theoretical score achieved by a student is 32, and the highest score is 160. The frequency distribution of emotional intelligence scores of students who have been grouped can be seen in the following table.

Tabel 3. Frequency distribution of emotional intelligence

| No | Interval Class | Frequency Absolute | Frequency Relative (%) | Frequency Cumulative (%) |
|----|----------------|--------------------|------------------------|--------------------------|
| 1 | 92 -97 | 10 | 8,33 | 8,33 |
| 2 | 98 – 103 | 11 | 9,17 | 17,51 |
| 3 | 104 – 109 | 16 | 13,33 | 30,84 |
| 4 | 110 – 115 | 21 | 17,50 | 48,34 |
| 5 | 116 – 121 | 27 | 22,50 | 70,84 |
| 6 | 122 – 126 | 13 | 10,83 | 81,67 |
| 7 | 127 – 133 | 15 | 12,50 | 94,17 |
| 8 | 134 – 139 | 7 | 5,83 | 100,00 |
| | Total | 120 | 100 | |

A total of 21 (17.50%) respondents were in the average group, 7 (30.84%) respondents were below the average group and 62 (51.66%) respondents above the average group.

Analysis Requirements Testing

1. Normality Test

The normality test is one of the statistical tests used to determine whether a dataset is normally distributed or not (Dharmawati et al., 2025). Normal distribution is an essential assumption in many parametric statistical analyses, such as the t-test, ANOVA, or linear regression, because these methods assume that the data follows a normal distribution pattern (Ahadi & Zain, 2023). In SPSS, normality tests can be easily performed using several techniques, such as Kolmogorov-Smirnov for large samples or Shapiro-Wilk for small samples. The process involves using the Explore menu under Descriptive Statistics, where researchers can select the variables they want to test and activate the Normality plots with the tests option. The test results will show a significant value (p-value) that determines whether the data is normally distributed (if $p > 0.05$) or not (if $p \leq 0.05$). By understanding the normality test, researchers can ensure that the statistical analysis they perform is valid and meets the necessary assumptions.

Normality testing is intended to test whether the population is normally distributed or not. The test criteria are normally distributed if H_0 is accepted and not normally distributed if H_0 is rejected.

$$H_0: L_{O_{maksimum}} < L_{tabel}$$

$$H_1: L_{O_{maksimum}} > L_{tabel}$$

Information:

H0: The population is normally distributed

H1: The population is not normally distributed

Testing for normality requirements was carried out using the Liliefors test.

a. Normality Test of Student Learning Results (Y)

Based on the calculation results, the maximum L_o value or calculated L is obtained - 0.0608. This value is smaller than L table ($n = 120$; $\alpha = 0.05$) = 0.0809. By because $L_{o_{\text{maximum}}}$ (0,0608) L_{count} (0,0809), then the Y data comes from the population which is normally distributed.

b. Student Initial Ability Normality Test (X1)

Based on the calculation results, the maximum L_o value or calculated L is obtained 0.0804. This value is smaller than L table ($n=120$; $\alpha = 0.05$) = 0.0809. By because $L_{o_{\text{maximum}}}$ (0,0804) L_{table} (0,0809), then the Y data comes from normally distributed population.

c. Student Emotional Intelligence Normality Test (X2)

Based on the calculation results, the maximum L_o value or calculated L is obtained = 0.0467. This value is smaller than L table ($n = 120$; $\alpha = 0.05$) = 0.0809. By because $L_{o_{\text{maximum}}}$ (0,0467) L_{table} (0,0809), then the Y data comes from normally distributed population. Summary of normality calculation results can be seen in the following table:

Tabel. 4. Summary of normality test analysis

| Variable | N | L_{count} | $\frac{L_{\text{table}}}{\alpha = 0,05}$ | Description |
|----------|-----|--------------------|--|-------------|
| Y | 120 | 0,0608 | 0,0809 | Normal |
| X1 | 120 | 0,0804 | 0,0809 | Normal |
| X2 | 120 | 0,0467 | 0,0809 | Normal |

2. Homogeneity Test

a. Homogeneity Test of Variance Y over X1

The calculation results for testing the homogeneity of variance Y over X1 are obtained X^2 count = 85,62. The value of X^2 table with dk 95 at $\alpha = 0.05$ is 113.1 and at $\alpha = 0.01$ it is 124.1.9 Because $X^2_{\text{count}} < X^2_{\text{table}}$, then H0 is accepted, this means that the variance of groups Y over X1 is homogeneous.

b. Homogeneity Test of Variance Y over X2

The calculation results for testing the homogeneity of variance Y over X2 are obtained $X^2_{\text{count}} = 56,62$. The x^2 table value with dk 83 at $\alpha = 0,05$ is 101,9 and at $\alpha = 0,01$ is 112,3. Because $X^2_{\text{count}} < X^2_{\text{table}}$, then H0 is accepted, meaning. The variance of groups Y over X is homogeneous. Overall test results homogeneity of variance is summarized in the following table:

Tabel 5. Summary of homogeneity analysis

| No | Y Data Variation Seen from Data Group | dk | X^2_{count} | X^2_{table} | | Conclusion |
|----|---------------------------------------|----|----------------------|----------------------|-----------------|-------------|
| | | | | $\alpha = 0,05$ | $\alpha = 0,01$ | |
| 1 | X1 | 95 | 85,62 | 113,1 | 124,1 | Homogeneous |
| 2 | X2 | 83 | 56, 62 | 101,9 | 112,3 | Homogeneous |

Information:

Y = Student learning outcome variable

X1 = Student initial ability variable

X2 = Student emotional intelligence variable

Hypothesis Testing

1. Relationship between students' initial abilities and student learning outcomes

The first hypothesis proposed in this research states that there is a positive relationship between students' initial abilities (X1) and student learning outcomes (Y). The basis for testing the first hypothesis stating that there is a positive relationship between students' initial abilities (X1) and student learning outcomes (Y) can be referred to from various theories and supporting research findings. First, constructivism theory emphasizes that new knowledge is built on previously possessed knowledge. Students with good initial abilities tend to find it easier to understand and integrate new material, so that their learning outcomes are more optimal.

In addition, Piaget's cognitive theory also supports this by explaining that strong initial abilities allow students to assimilate and accommodate new information more effectively, which ultimately improves learning outcomes (Rabindran & Madanagopal, 2020). Vygotsky's theory of the Zone of Proximal Development (ZPD) also emphasizes that students' initial knowledge acts as a foundation for achieving potential development levels, where students with good initial abilities find it easier to reach their ZPD (Muntasir & Akbar, 2023). In addition to these theories, previous empirical research, such as that conducted by Bloom on mastery learning, has shown that students' initial abilities, such as prerequisite knowledge or pretest scores, have a positive correlation with learning outcomes, such as posttest scores or academic achievement. Ausubel's theory of meaningful learning also states that learning will be more effective when new information is linked to students' existing knowledge, so that strong prior abilities facilitate this process (Anandita et al., 2025). Motivation and self-confidence factors also play a role, where students with good prior abilities tend to be more confident and motivated to learn, which ultimately has a positive impact on learning outcomes. Thus, this hypothesis is based on strong theoretical and empirical foundations, indicating that students' prior abilities are essential predictors of learning success. Simple regression analysis calculations based on outcome variable data, student teaching on students' initial abilities, produce a regression direction $b = 1.928$ and the constant $a = 7.93$. Thus a relationship forms between these two variables can be described through the regression equation $= 7.93 + 1.928X_1$.

Before being used for prediction purposes, this regression equation must fulfill the requirements of the significance test and linearity test. Therefore to determine the degree of significance and linearity of the regression, an F test was carried out and the results can be examined in this table:

Tabel 6. Table for significance and linearity testing

$$Y = 7,93 + 1,928X_1$$

| Source Variance | Dk | JK | RJK | F _{count} | F _{table} | |
|-----------------|-----|-------|-----|--------------------|--------------------|----------|
| | | | | | a = 0,05 | a = 0,02 |
| Total | 120 | 57709 | | | | |

| | | | | | | |
|------------------|-----|--------|--------|---------------------|------|------|
| Regression (a) | 1 | 55513 | | | 4,24 | 7,77 |
| Regression (b/a) | 1 | 1379,4 | 1379,4 | 119,34** | | |
| Remainder | 118 | 816,6 | 6,92 | | | |
| Tuna Suitable | 23 | 353,6 | 15,37 | 1,087 ^{ns} | 1,96 | 2,62 |
| Error | 25 | 463 | 18,52 | | | |

Information:

- ** : Very significant regression $F_{hitung} > F_{tabel}$ at $\alpha = 0,01$
- ns : Significant $F_{hitung} < F_{tabel}$, linear regression
- Dk : Degree of freedom
- JK : Sum of Squares
- RJK : Mean Sum of Squares

Based on the results of significance and linearity testing as in table 4.6 above, it can be seen that the regression equation $Y = 7,93 + 1,928X_1$ is very significant and linear. The regression model means that if initial ability is increased by one point, then student learning outcomes tend to increase by 1.982 points at a constant of 7.93. Strength of variable relationships students' initial abilities (X_1) with student learning outcomes (Y) shown by the correlation coefficient (ry_1) is 0,798. Test the significance of the correlation coefficient with the test t, the calculated t value is 14.21, while the trouble at $\alpha = 0.01$ and $dk = 118$ obtained from table 2,36.13. Because $t_{count} > t_{table}$, the correlation coefficient is very significant. To be more transparent about the relationship between X_1 and Y , you can see it in Table 7. Coefficient Significance test results correlation of X_1 with Y .

Tabel 7. Test results for the significance of the correlation coefficient X_1 with Y

| N | ry1 | t _{count} | t _{table} | |
|-----|-------|--------------------|--------------------|-----------------|
| | | | $\alpha = 0,05$ | $\alpha = 0,01$ |
| 120 | 0,798 | 14,21** | 1,66 | 2,36 |

Information:

- ** = Very significant correlation ($t_{count} 14,21$ $t_{table} = 2,36$ at $\alpha = 0,01$)
- ry_1 = Correlation coefficient between X_1 and Y

Based on the results of significance testing as in Table 7, it turns out that the coefficient of the correlation between students' initial abilities and student learning outcomes is very significant. Thus, the research hypothesis states that there is a positive relationship between students' initial ability variables and learning outcomes, as students are tested for truth. In other words, the higher the student's initial ability, the higher the student's learning outcomes will be. The coefficient of determination is the square of the correlation coefficient of students' initial skills with student learning outcomes namely $(ry_1)^2 = (0,798)^2 = 0,623$. This means that 62.3% of the variation occurred in the results. Their initial abilities can explain student learning.

To determine the relationship between students' initial abilities and learning outcomes, students were controlled for the emotional intelligence variable, and partial correlation calculations were carried out. The partial correlation coefficient obtained between Y and X_1 if the variable X is controlled ($ry_{1.2}$) = 0.323. The partial correlation significance test was carried out using the t test. The test results are listed in the following table.

Tabel 8. Summary of partial correlation coefficients X1 with Y if X2 is controlled

| The Partial Correlation Coefficient | t_{count} | t_{table} | |
|-------------------------------------|-------------|-----------------|-----------------|
| | | $\alpha = 0,05$ | $\alpha = 0,01$ |
| $r_{y1} = 0,323$ | 3,702** | 1,72 | 2,53 |

Information:

- **= The partial correlation coefficient is very significant ($t_{count} = 3,702$ t_{table} at $\alpha = 0,01$)
- r_{y1} = Partial correlation coefficient between X1 and Y if X2 is controlled.

The interpretation of the test results above is, if control is carried out towards the emotional intelligence variable (X2), initial ability (X1) has positive and significant relationship with student learning outcomes (Y).

2. *The relationship between student emotional intelligence and student learning outcomes*

The second hypothesis proposed in this research states that there is a positive relationship between students' emotional intelligence (X2) and learning outcomes of students (Y). Simple regression analysis calculations based on outcome variable data, students' mathematics learning, and students' emotional intelligence produce direction regression b is 0.186 and constant a is 18.94. Thus, the relationship between these two variables can be described through the Y equation = $18.94 + 0.186X_2$.

Before being used for prediction purposes, this regression equation must fulfill the requirements of the significance test and linearity test. Therefore to determine the degree of significance and linearity of the regression, the F test was carried out and the results can be reviewed in Table 9.

Tabel 9. ANOVA table on significance and linearity testing

| Variation Source | Dk | JK | RJK | F_{count} | F_{table} | |
|------------------|-----|---------|---------|--------------------|-----------------|-----------------|
| | | | | | $\alpha = 0,05$ | $\alpha = 0,02$ |
| Total | 120 | 57709 | | | | |
| Regression (a) | 1 | 55513 | | | | |
| Regression (b/a) | 1 | 1783,29 | 1783,29 | 510,29** | 4,11 | 7,38 |
| Remainder | 118 | 412,71 | 3,49 | | | |
| Tuna Suitable | 35 | 139,71 | 7,38 | 0,95 ^{ns} | 1,78 | 2,26 |
| Error | 37 | 273 | 7,8 | | | |

Information:

- **: Very significant regression $F_{count} > F_{table}$ at $\alpha = 0,01$
- ns: Significant $F_{count} < F_{table}$, linear regression
- Dk: Degree of Freedom
- JK: Sum of Squares
- RJK: Mean Sum of Squares

Based on the results of significance and linearity testing as in Table 9 above, it can be seen that the regression equation $Y = 18.94 + 0.186X_2$ is very significant and linear.

The regression model means that if emotional intelligence is increased by one point, then student learning outcomes tend to increase by 0.186 points at a constant of 18.94.

The strength of the relationship between the student's initial ability variable (X1) and the results of student learning (Y) is shown by a correlation coefficient (ry2) of 0.90. Test the significance of the correlation coefficient with the t test, obtained a t value of 51.47, while t_{table} at $\alpha = 0.01$ and $dk = 118$ obtained table 2.36.16 Therefore $t_{count} > t_{table}$ then the correlation coefficient ry2 is very significant. To be clearer regarding the relationship between X2 and Y can be seen in the following table:

Tabel 10. Results of testing the significance of coefficient X2 with Y

| N | ry2 | t _{count} | t _{table} | |
|-----|------|--------------------|--------------------|-----------------|
| | | | $\alpha = 0,05$ | $\alpha = 0,01$ |
| 120 | 0,90 | 51,47** | 1,66 | 2,36 |

Information:

- ** : Very significant correlation ($t_{count} = 51.47 > t_{table} = 2.36$ at $\alpha = 0.01$)
- ry2 : Correlation coefficient between X2 and Y

Based on the results of significance testing as in Table 10, it turns out that the correlation coefficient between students' initial abilities and student learning outcomes is very significant. Thus, the research hypothesis states that there is a positive relationship between students' initial ability variables and learning outcomes, as students are tested for truth. In other words, the higher the student's initial ability, the higher the student's learning outcomes will be. The coefficient of determination is the square of the correlation coefficient of students' initial skills with student learning outcomes, $(ry2)^2 = (0.90)^2 = 0.81$. This means that their emotional intelligence can explain 81% of the variation in learning outcomes.

To determine the relationship between students' emotional intelligence and learning outcomes, students were controlled for their initial ability variables, and partial correlation calculations were carried out. The partial correlation coefficient obtained between Y and X2 if the variables are controlled by X1 ($ry2.1$) = 0.69. The partial correlation significance test was carried out using the t test. The test results are listed in the following table:

Tabel 11. Summary of partial correlation coefficients X1 with Y if X2 is controlled

| Correlation Coefficient Partial | t _{count} | t _{table} | |
|---------------------------------|--------------------|--------------------|-----------------|
| | | $\alpha = 0,05$ | $\alpha = 0,01$ |
| ry2 = 0,69 | 10,3** | 1,70 | 2,46 |

Information:

- ** = The partial correlation coefficient is very significant ($t_{count} = 10.3 > t_{table}$ at $\alpha = 0.01$)
- ry2 = Partial correlation coefficient between X2 and Y if X1 is controlled.

The interpretation of the test results above is, if control is carried out on the variables of students' initial abilities (X1), students' emotional intelligence (X2) has a positive relationship between significance and student learning outcomes (Y).

3. *Relationship between students' initial abilities and students' emotional intelligence together with student learning outcomes*

The third hypothesis proposed in this research states that there is a positive relationship between students' initial abilities and students' emotional intelligence with student learning outcomes. Multiple regression analysis calculations based on data variable student learning outcomes, student initial abilities, or intelligence, students' emotions produce a regression direction a_1 of 0.103 for students' initial abilities (X1), a_2 of 0.33 for students' emotional intelligence (X2), as well as the constant a_0 is 21.1. Thus, the relationship between the two variables forms together with the dependent variable can be described through the regression equation $Y = 21.1 + 0.103X_1 + 0.33X_2$.

Before being used for prediction purposes, this regression equation must fulfill the requirements of the regression significance test. To find out the degrees of significance and linearity of the regression, the F test was carried out, and the results can be reviewed in the following table.

Tabel 12. ANOVA Table for significance and linearity testing

$$\text{Regression } Y = 21,1 + 0,103X_1 + 0,33X_2.$$

| Source Variance | db | JK | RJK | F _{count} | F _{table} | |
|-----------------|-----|--------|-------|--------------------|--------------------|----------|
| | | | | | a = 0,05 | a = 0,01 |
| Regression | 2 | 1779,4 | 889,7 | 249,85** | 4,11 | 7,39 |
| Remainder | 117 | 416,6 | 3,561 | | | |

Information:

- **= Very significant regression ($F_{\text{count}} > F_{\text{table}}$)
- dk = Degree of Freedom
- JK = Sum of Squares
- RJK = Mean Sum of Squares

Based on the results of significance testing in table 12 above, you can it is known that the regression $= 21.1 + 0.103X_1 + 0.33X_2$ is very significant. Strength multiple coefficients between variable X1 and variable X2 with variable Y produces a multiple correlation coefficient $R = 0.87$. *** Test the significance of the coefficient multiple correlation with the F test, obtaining an F value of 249.72. In contrast, F_{table} at $a = 0.01$ with dk numerator 2 and dk denominator 117 obtained $F_{\text{table}} = 4.82$.***Because $F_{\text{count}} > F_{\text{table}}$, the multiple correlation coefficient is very highly significant. For more details regarding the strength of the relationship between X1 and X2 with Y, see the following table.

Tabel 13. Test of the significance of multiple correlation coefficients

| N | R _{y.12} | F _{count} | F _{table} | |
|-----|-------------------|--------------------|--------------------|----------|
| | | | a = 0,05 | a = 0,01 |
| 117 | 0,87 | 249,72 | 2,62 | 2,36 |

Based on the results of significance testing as in table 13, it can be seen that the multiple correlation coefficient in this study proved to be very significant. These findings demonstrate that there is a positive relationship between students' abilities and their beginnings, and students' emotional intelligence, together with the results that students' learning is proven to be true. The coefficient of determination (Ry.12) is equal to

$(R_{y.12})^2 = (0.87)^2 = 0.757$. This means that 75.7% of the variation in learning outcomes in students' mathematics can be explained by variations in their initial abilities and students' emotional intelligence. Seeing that the coefficient of determination is quite significant, namely 75.7%, meaning other variables contribute the rest. Mark the percentage contribution of students' initial abilities and students' emotional intelligence, and the impact on student learning outcomes is quite significant. Test the significance of the multiple correlation coefficient with the F test, obtained F_{count} of 28.06 and F_{table} at the significance level $\alpha = 0.05$ is 4.71, and at $\alpha = 0.01$ it is 3.07. Because $F_{count} > F_{table}$, the multiple correlation coefficient is very significant. For more details regarding the strength of the relationship between independent variables (X1 and X2) and the dependent variable (Y), see the following table.

Tabel 14. Test of the significance of multiple correlation coefficients

| N | $R_{y.12}$ | F_{count} | F_{table} | |
|-----|------------|-------------|-----------------|-----------------|
| | | | $\alpha = 0,05$ | $\alpha = 0,01$ |
| 120 | 0,87 | 28,06 | 4,71 | 3,07 |

Rating of the strength of the relationship between each independent variable and the dependent variable in this research which is based on partial coefficient calculations, it appears in table 15 below.

Tabel 15. Rating of strength of relationship between independent variables and variables bound

| Partial Correlation Coefficient | Rating |
|---------------------------------------|--------|
| Student emotional intelligence = 0.69 | First |
| Student initial ability = 0.323 | Second |

Based on table 15. It appears that the independent variable is the strongest partial relationship with the dependent variable is Emotional Intelligence Student (X2) is ranked first followed by the initial ability variable student (X1) as second place.

IV. CONCLUSION

The results of this study indicate that both students' initial abilities and emotional intelligence have a significant and positive influence on their learning outcomes. The analysis shows that students have varying levels of initial ability (mean = 7.04; mode = 6.69; median = 6.88), and these abilities contribute 79.8% to student learning outcomes ($r^2 = 0.798$). This suggests that students with higher initial abilities tend to achieve better academic results, especially in mathematics. Similarly, emotional intelligence scores also vary among students (mean = 115.2; mode = 117.26; median = 115.94), with a substantial contribution to learning outcomes ($r^2 = 0.90$), indicating that students with higher emotional intelligence perform better academically. The combination of initial abilities and emotional intelligence yields a multiple correlation coefficient of 0.87 and a determination coefficient of 0.757, meaning that 75.7% of student learning outcomes are influenced by both factors together. Notably, emotional intelligence contributes up to 97% in influencing learning outcomes, suggesting its dominant role. These findings underline the importance of considering both cognitive (initial ability) and affective (emotional intelligence) domains in improving student academic achievement. Therefore, efforts to enhance learning outcomes should not only focus on academic preparation but also foster students' emotional intelligence through targeted interventions and support systems within the educational environment.

V. REFERENCES

- [1] Ahadi, G. D., & Zain, N. N. L. E. (2023). The Simulation Study of Normality Test Using Kolmogorov-Smirnov, Anderson-Darling, and Shapiro-Wilk. *Eigen Mathematics Journal*, 6(1), 11–19. <https://doi.org/10.29303/emj.v6i1.131>
- [2] Akyıldız, S. T., & Ahmed, K. H. (2021). An Overview of Qualitative Research and Focus Group Discussion. *International Journal of Academic Research in Education*, 7(1), 1–15. <https://doi.org/10.17985/ijare.866762>
- [3] Amanda, D. D. ... Ratnasari, D. (2025). Pengaruh Regulasi Emosi Siswa terhadap Proses Pembelajaran di Kelas. *Jurnal Pendidikan Tambusai*, 9(1), 1443–1448. <https://jptam.org/index.php/jptam/article/view/24401>
- [4] Amelia, R. E. ... Fitrianingtyas, A. (2021). Pengaruh Regulasi Emosi terhadap Interaksi Sosial Selama Pembelajaran Home Visit Akibat Pandemi Covid-19 di TK B. *Jurnal PG-PAUD Trunojoyo : Jurnal Pendidikan Dan Pembelajaran Anak Usia Dini*, 8(2), 10–20. <https://doi.org/10.21107/pgpaustrunojoyo.v8i2.11350>
- [5] Anandita, A. ... Baihaqi, H. (2025). Enhancing Physics Learning with Advance Organizer: A Meta-Cognitive Approach. *Konstan - Jurnal Fisika Dan Pendidikan Fisika*, 10(1). <https://doi.org/10.20414/konstan.v10i01.641>
- [6] Anjarwati, L., & Juliprijanto, W. (2021). Determinan Pengangguran Terdidik Lulusan Universitas di Pulau Jawa. *Jurnal Ekonomi Pembangunan*, 10(3), 178–187. <https://doi.org/10.23960/jep.v10i3.280>
- [7] Cristina, G. (2024). Acehese Folklore and Social Behavior. *Journal of Aceh Studies*, 1(1), 51–60. <https://doi.org/10.63924/joas.v1i1.47>
- [8] Dawadi, S. ... Giri, R. A. (2021). Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education*, 2(2), 25–36. <https://doi.org/10.46809/jpse.v2i2.20>
- [9] Dharmawati, A. ... Wardiyah, M. L. (2025). Analisis Hubungan Preferensi Mata Kuliah dengan Motivasi Belajar Mahasiswa Akuntansi Syariah UIN Bandung Tahun 2023. *Jurnal Kendali Akuntansi*, 3(3), 26–40. <https://doi.org/10.59581/jka-widyakarya.v3i3.5173>
- [10] Dhewy, R. C. (2022). Pelatihan Analisis Data Kuantitatif Untuk Penulisan Karya Ilmiah Mahasiswa. *J-ABDI: Jurnal Pengabdian Kepada Masyarakat*, 2(3), 4575–4578. <https://doi.org/10.53625/jabdi.v2i3.3224>
- [11] Fajartriani, T. ... Karsiwan, W. (2024). Peran Pendidikan Dalam Meningkatkan Kualitas Sumber Daya Manusia. *Jealo*, 6(1), 9–17. <https://journal.umbogorraya.ac.id/index.php/jealo/article/view/318>
- [12] Huseng, A. M. ... N, N. (2025). Taxonomi Pendidikan Dimensi Pengetahuan, Sikap, dan Keterampilan. *Socius: Jurnal Penelitian Ilmu-Ilmu Sosial*, 2(9), 107–116. <https://doi.org/10.5281/zenodo.15301124>

- [13] Justan, R. ... Sumiati, S. (2024). Penelitian Kombinasi (Mixed Methods). *Ulil Albab : Jurnal Ilmiah Multidisiplin*, 3(2), 253–263. <https://doi.org/10.56799/jim.v3i2.2772>
- [14] Kumar, M., & Mishra, R. (2016). Emotional Maturity and Academic Achievement among Adolescent Students: A Review of Studies. *International Journal of Indian Psychology*, 3. <https://doi.org/10.25215/0304.035>
- [15] Mardiyanti, S. (2023). Pengaruh Kematangan Emosional Terhadap Motivasi Belajar Siswa. *Malih Peddas (Majalah Ilmiah Pendidikan Dasar)*, 13(1). <https://doi.org/10.26877/malihpeddas.v13i1.15919>
- [16] Muntasir, M., & Akbar, I. (2023). Revisiting the Significance of ZDP and Scaffolding in English Language Teaching. *JETLEE : Journal of English Language Teaching, Linguistics, and Literature*, 3(1), 40–45. <https://doi.org/10.47766/jetlee.v3i1.1276>
- [17] Mwita, K. (2022). Factors influencing data saturation in qualitative studies. *International Journal of Research in Business and Social Science (2147- 4478)*, 11(4), 414–420. <https://doi.org/10.20525/ijrbs.v11i4.1776>
- [18] Nurhayati ... Ahsan, N. H. J. (2024). *Metodologi Penelitian Kualitatif (Teori dan Praktik)*. PT. Sonpedia Publishing Indonesia.
- [19] Oktaviani, U. ... Susanti, E. (2020). Identifikasi Faktor Penyebab Rendahnya Hasil Belajar Matematika Peserta Didik di SMK Negeri 1 Tonjong. *Math Locus: Jurnal Riset Dan Inovasi Pendidikan Matematika*, 1(1), 1–6. <https://doi.org/10.31002/mathlocus.v1i1.892>
- [20] Purwanza, S. W. (2022). *Metodologi Penelitian Kuantitatif, Kualitatif Dan Kombinasi*. CV. Media Sains Indonesia.
- [21] Rabindran, R., & Madanagopal, D. (2020). Piaget's Theory and Stages of Cognitive Development- An Overview. *Scholars Journal of Applied Medical Sciences*, 8(9), 2152–2157. <https://doi.org/10.36347/sjams.2020.v08i09.034>
- [22] Rudiyanti, N. ... Purnamasari, P. (2025). Pengaruh Strategi Pemasaran Terhadap Penambahan Segmen Pasar Baru Di Restoran Kopi Express. *Jisosepol: Jurnal Ilmu Sosial Ekonomi Dan Politik*, 3(1), 132–138. <https://doi.org/10.61787/zk322946>
- [23] Safitri, A. ... Prihantini, P. (2022). Pentingnya Memahami Karakteristik Peserta Didik Sekolah Dasar untuk Meningkatkan Efektivitas Belajar dalam Mata Pelajaran Bahasa Indonesia. *Jurnal Pendidikan Tambusai*, 6(2), 9333–9339. <https://doi.org/10.31004/jptam.v6i2.3886>
- [24] Salam, A. (2022). *Metode Penelitian Kualitatif*. CV. Azka Pustaka.
- [25] Samsudin, M. (2020). Faktor-Faktor yang Memengaruhi Belajar. *Eduprof: Islamic Education Journal*, 2(2), 162–186. <https://doi.org/10.47453/eduprof.v2i2.38>
- [26] Sari, E. R. ... Purnama, M. (2023). Kreativitas Guru Melibatkan Ragam Model Pembelajaran dalam Kegiatan Pembelajaran Matematika terhadap Keberhasilan

- Belajar Siswa di Sekolah Dasar. *Journal on Education*, 5(3), 8947–8959.
<https://jonedu.org/index.php/joe/article/view/1691>
- [27] Siregar, I. A. (2021). Analisis Dan Interpretasi Data Kuantitatif. *Alacrity : Journal of Education*, 1(2), 39–48. <https://doi.org/10.52121/alacrity.v1i2.25>
- [28] Sofwatillah ... Saksitha, D. A. (2024). Teknik Analisis Data Kuantitatif dan Kualitatif dalam Penelitian Ilmiah. *Jurnal Genta Mulia*, 15(2).
<https://ejournal.uncm.ac.id/index.php/gm/article/view/1147>
- [29] Srivastava, M., & Jaiswal, S. (2022). Emotional quotient vs. intelligence quotient to achieve professional excellence in life: a systematic literature review. *International Journal Of Community Medicine And Public Health*, 9(12), 4662–4665. <https://doi.org/10.18203/2394-6040.ijcmph20223229>
- [30] Taherdoost, H. (2022). What are Different Research Approaches? Comprehensive Review of Qualitative, Quantitative, and Mixed Method Research, Their Applications, Types, and Limitations. *Journal of Management Science & Engineering Research*, 5(1), 53–63. <https://doi.org/10.30564/jmsr.v5i1.4538>
- [31] Thalib, M. A. (2022). Pelatihan Teknik Pengumpulan Data dalam Metode Kualitatif untuk Riset Akuntansi Budaya. *Seandanan: Jurnal Pengabdian Pada Masyarakat*, 2(1), 44–50. <https://doi.org/10.23960/seandanan.v2i1.29>
- [32] Wardah, A. ... Bakar, M. Y. A. (2025). Mengidentifikasi Pembelajaran Berbasis Kemampuan Awal: Menyesuaikan Pengajaran Dengan Potensi Siswa. *Jurnal Ilmiah Nusantara*, 2(3). <https://doi.org/10.61722/jinu.v2i3.4642>
- [33] Wulandari, H., & Nurhaliza, I. (2023). Mengembangkan Potensi Guru Yang Profesional Dalam Proses Belajar Mengajar. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, 9(2), 2487–2509. <https://doi.org/10.36989/didaktik.v9i2.990>
- [34] Wulandari, K. D. ... Bakar, M. Y. A. (2024). Optimalisasi Pembelajaran Melalui Pemahaman Kemampuan Awal Peserta Didik. *Jurnal Sains Student Research*, 2(6).
<https://doi.org/10.61722/jssr.v2i6.2902>