



# Teacher Support Facilitates Problem Based Learning Despite Unchanged Moral Faith Motivation

## Dukungan Guru Memfasilitasi Pembelajaran Berbasis Masalah Meskipun Motivasi Akidah Akhlak Tetap

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### OPEN ACCESS

ISSN 2503 5405 (online)

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Reviewed by:  
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**General Background** In the modern globalization era, educational environments must integrate innovative pedagogies to facilitate deep and meaningful comprehension among learners. **Specific Background** Within moral faith instruction, conventional lecture-based delivery often fails to actively engage learners, resulting in passive participation and a highly theoretical appreciation of the subject matter. **Knowledge Gap** While contextual pedagogies are widely advocated, there remains a limited quantitative understanding regarding how instructional scaffolding directly translates to student drive within the specific context of moral faith subjects. **Aims** This study investigates the relationships between instructional scaffolding, the application of problem-oriented pedagogy, and student drive in moral faith classes at MTs Masyitoh Gamping. **Results** Utilizing Partial Least Squares Structural Equation Modeling on survey data from 39 respondents, the analysis revealed a strong positive relationship between instructional scaffolding and the application of problem-oriented pedagogy with an effect size of 0.803. Conversely, instructional scaffolding and problem-oriented pedagogy yielded weak associations with student drive, jointly accounting for only 6.2 percent of the variance. **Novelty** This research isolates the distinct boundary between instructional scaffolding for methodological application and the complex external variables governing true student drive in moral faith settings. **Implications** Educators must look beyond mere methodological implementation and incorporate holistic, individualized strategies involving family and psychological environments to meaningfully foster student drive.

### Highlights

- Instructional scaffolding strongly facilitated the application of problem-oriented pedagogical methods.
- The implemented contextual pedagogy did not directly alter the drive of the respondents.
- External and internal variables outside the modeled instructional framework governed respondent drive.

### Keywords

Instructional Scaffolding; Problem Oriented Pedagogy; Moral Faith Education; Student Drive; Partial Least Squares

Received: 13 January 2026

Accepted: 11 July 2026

Published: 15 July 2026

Citation:

Zahra Angelita Prasetya, Abd. Madjid  
(2026) Teacher Support Facilitates  
Problem Based Learning Despite  
Unchanged Moral Faith Motivation

Halaqa: Islamic Education Journal 10:2.  
doi: 10.21070/halaqa.v10i2.1830

## BACKGROUND

In today's era of globalization, society cannot avoid rapid social, economic, and cultural changes. This change has led to modernization, with various advantages and obstacles affecting different aspects, especially education. According to Rizqi (2023), the world of education must implement innovations and breakthroughs that incorporate modern learning principles to enhance students' understanding of the learning process. According to Maghfiroh (2025), one of the principles that can be applied is the problem-based learning method. This is a learning approach based on contextual problems that requires investigative effort to solve them. This effort can be implemented in classroom learning, including the subject of moral beliefs. Moral faith lessons are not only oriented towards simple material mastery. But it can also establish the values of faith and noble morals in daily life. By using the problem-based learning method, Students are expected to examine problems related to faith and morals, making the Learning process more meaningful and contextual, and increasing student motivation for Learning.

However, according to Sholihah et al. (2025), the current learning method for Moral Faith remains predominantly lecture-based and memorization-driven, so students have not fully absorbed the teacher's instruction. When teachers focus solely on delivering material without engaging in two-way communication, it results in a lack of student involvement in solving problems in their daily lives. This also results in the assumption that learning the Moral Faith is only theoretical and has low motivation to learn and curiosity in students (N Rahmadhiah, 2025)

If this continues, it can result in the loss of the essence of learning Akidah Akhlak, which aims to shape students' character and morals (Aslan & Nurhayati, 2025). ). Low motivation to learn in students can result in a lack of depth of understanding, making it difficult for students to relate learning to daily activities. In addition, the lack of teacher support in implementing the problem-based learning (PBL) method can hinder students' ability to be critical, solve problems, and be reflective.

Therefore, an in-depth study is needed on the role of teacher support in the application of problem-based learning methods and its impact on students' motivation to learn Akidah Akhlak. This research is expected to provide a realistic picture of how teacher support affects increases in student motivation to learn, while also serving as an evaluation and recommendation tool for teachers in developing active, contextual, and meaningful moral education.

## RESEARCH METHODS

This research adopts a quantitative methodology, using a survey technique (Kurniawati & Rindrayani, 2025). This objective method was selected as it seeks to quantify the relationship between the peseran and teacher support (Zahra et al., 2024) in the application of the problem-based learning method (Diandini, 2016) regarding the Motivation of Students to Learn Moral Beliefs (Suhudi et al., 2024). Approach II enables the data obtained to be statistically analyzed, allowing for the production of empirical and structured conclusions.

The research design used is survey research, in which data are collected through questionnaires distributed to participants (Maidiana, 2021). The survey describes real conditions in the field related to students' perceptions of the role of teacher support in problem-based Learning and the level of student learning motivation. This design allows researchers to identify tendencies, relationship patterns, and contribution rates between variables. The population of this study comprises 39 middle school students.

This research took place at MTs Masyitoh, Gamping, Sleman. This technique was chosen to ensure that the data obtained are more representative and can describe the condition of the population as a whole.

This research involved three variables: teacher support (X1), the problem-based learning method (X2), and students' learning motivation (Y). the interplay between these variables was analyzed to determine how teacher support might influence students' motivation to learn. Data collection utilized a questionnaire designed with a Linkert scale, constructed around the three variables. Participants completed the questionnaire voluntarily. The aim was to gather data in a structured and efficient manner to enable straightforward analysis.

The collected data were processed using quantitative statistical methods. The analysis included descriptive statistics to summarize and illustrate the characteristics of the research variables. Inferential statistical analysis was then conducted to examine the relationship and impact of teacher support on students' learning motivation. These analytical results form the foundation for drawing comprehensive conclusions that align with the study's objective:

## RESULT AND DISCUSSION

### A. Uji Outer Model

[Figure 1. about here]

#### Validity Test

The validity of the construct can be established through two testing phases: convergent validity and discriminant validity. Convergent validity is determined by evaluating the consistency of external loading values and AVE data. The results of data processing can be observed in the Fornell-Larcker Criterion cross-loadings and HTMT values. These indicators provide insights into the relationships and validity within the measurement model.

#### 1. Convergent Validity

Based on the variable-level validity test results in Table 1 below, there are 10 invalid dimensions: DG2, DG4, DG5, PBL1, PBL2, PBL5, MB1, MB3, MB4, and MB5. As for the invalid dimensions, they will be excluded from the next analysis because they do not meet the convergent validity requirements, which will affect the Average Extracted (AVE) value. The following section presents the final results of the convergent validity analysis, which are reflected in the loading factor values at the variable level:

[Table 1. about here]

The table below presents the final result of the Average Variance Extracted (AVE) data, which are required to have values greater than 0.5:

[Table 2. about here]

Based on the data in the two tables above, the Average Variance Extracted (AVE) for each variable is above 0.5, indicating that the criteria for convergent validity have been met. Thus, all variables in this study satisfy the requirements.

#### 2. Validity of Discrimination

The results of the discriminant validity test are determined by ensuring that each dimension's self-correlation exceeds its correlations with other dimensions. In addition to examining correlation values, discriminant validity can be assessed using the Fornell-Larcker Criterion, cross-loadings, and the Heterotrait-Monotrait Ratio (HTMT) for individual items.

An indicator is considered to meet the requirements for discriminant validity if its cross-loading value with its own

The  $R^2$  value for the Problem-Based Learning variable, Teacher Support Facilitates Problem Based Learning Despite Unchanging Faith Motivation 0.445, indicates that the independent variables in the research

dimension is higher than its correlation with other dimensions, as shown in the Fornell-Larcker Criterion calculation table below:

[Table 3. about here]

Based on the data presented in Table 3 above, it is apparent that the correlation values for each variable with the other variables. This finding demonstrates that all variables included in this study have successfully passed the discriminant validity test. Moreover, beyond evaluating correlation values, discriminant validity can also be assessed by analyzing cross-loadings. The cross-loading values for each item within the variables are provided in the next table for further clarification:

[Table 4. about here]

Referring to the data shown in Table 4 above, it is evident that each variable dimension has a higher cross-loading value with itself than with other variable dimensions. This indicates that the variable dimensions utilized in this study have fulfilled the requirements for the discriminant validity test.

he final step in the discriminant validity assessment is to examine the Heterotrait-Monotrait Ratio (HTMT) value. Sholihah et al., (2025) recommend using the HTMT value as a more robust indicator of discriminant validity than the Fornell-Larcker Criterion and loading factor values. According to Nugroho et al., (2025) discriminant validity is considered to be met HTMT value, discriminant validity is considered met when the HTMT value, which measures the correlations between dimensions, is less than 0.90. The outcomes of the HTMT analysis are displayed in the table below.

[Table 5. about here]

## B. Reliability Test

### 1. Composite Reliability

The reliability test results demonstrated that both Cronbach's Alpha and composite reliability for all variables exceeded 0.70. This finding indicates that the research instrument is highly reliable, exhibits excellent internal consistency, and measures constructs with stable reliability. With the fulfillment of validity and reliability, the measurement model is feasible to proceed to structural model testing. The results are visible in the following table:

[Table 6. about here]

### 2. Model Inner Test

#### a. Goodness of fit

[Table 7. about here]

(Data source: primary data processed by researchers, 2025)

Based on the data presented in Table 5 above, the SMSR is 0.080, which is less than 0.20, indicating that the model meets the required criteria and is a good fit. Additionally, the model's evaluation using the NFI test yielded an NFI of 0.480. This suggests that the research model demonstrates a goodness-of-fit of 48% to the data, further supporting its suitability for this study red value ( $R^2$ )

#### b. R-square value ( $R^2$ )

[Table 8. about here]

(Source: primary data processed by researchers, 2025)

model explain 44.5% of the variation in the application of problem-based Learning. This result demonstrates that the model

has adequate explanatory power in describing the implementation of problem-based learning. Furthermore, the  $R^2$  value for the student learning motivation variable, which is 0.062, indicates that the independent variables in the research model account for

6.2% of the variation in student learning motivation. This score is relatively low, indicating that factors outside the scope of the research model still influence students' motivation to learn.

#### c. Value F-squared

Based on the effect size ( $F^2$ ) calculation, the effect of teacher support on problem-based learning has an  $F^2$  value of 0.803. This value is above 0.35, indicating a strong influence. This suggests that teacher support significantly enhances the application of problem-based Learning in the learning process. Meanwhile, the effect of teacher support on students' motivation to learn has an  $F^2$  value of 0.009, which is below the 0.02 threshold. This value falls into the weak-influence category, indicating that the teacher's direct support makes only a minimal contribution to students' motivation to learn. Furthermore, the effect of problem-based learning on students' learning motivation had an  $F^2$  value of 0.013, which is below 0.02 and classified as a weak influence. These findings indicate that the application of problem-based Learning has not had a significant influence on students' motivation to learn in this research model

[Table 9. about here]

Based on the data in the table above, the  $f^2$  value for the relationship between Teacher Support and Problem-Based Learning is 0.803, indicating that Teacher Support has a significant influence on the implementation of Prombelm-Based Learning. Furthrtmore, the  $f^2$  value for the relationship[ between Teacher Support and Learning Motivation is 0.009 , indicating that Teacher Support has a very small influence on Student Learning Motivation. In the relationship between Problem-Based Learning and Student Learning Motivation, an  $f^2$  value of 0.013 was obtained, indicating that Problem-Based Learning has a small influence on Student Learning Motivation.

#### d. Q square value ( $Q^2$ )

[Table 10. about here]

Based on the table above, the  $Q^2$  value for the Problem-Based Learning variable is 0.325, while the  $Q^2$  value for Student Learning Motivation is 0.005. Both values are above zero, which means that the model has predictive relevance. However, the model's predictive power is stronger for Problem-Based Learning than for Student Learning Motivation.

#### e. Uji Hypothesis

Based oBased on the results of testing the inner model, the data can be used to determine whether the hypotheses formulated in this study can be accepted or rejected. Based on the results of the internal model test, a T-statistic value is obtained. The hypothesis can be accepted if the T-statistic exceeds the Critical value of 1.96 ( $\alpha = 5$

%). In addition, the hypothesis test can be assessed from the P-value: if the P-value  $< 0.05$ , the hypothesis is accepted. The

results of the hypothesis test in this study were obtained from direct and indirect influence hypothesis test data, as explained in

[Table 11. about here]

[Table 12. about here]

## Discussion

The findings indicate that teacher support plays an important role in implementing Problem-Based Learning in Akidah Akhlak learning. In this context, teacher support is not only shown through the delivery of learning materials, but also through the problem-solving process. In Problem-Based

Learning, students are encouraged to identify problems, discuss possible answers, and develop solutions either individually or with their peers, therefore, teacher assistance is important to keep the learning process focused and connected to the learning objectives. Teacher support also helps students understand the stages of learning, participate actively in discussions, and connect the problems being studied with the values of faith and morality in everyday life. This is in line with Nugroho et al. (2025), who explain that teacher support, in the form of clear guidance, constructive feedback, and a positive learning environment, can increase student engagement and participation in project- or problem-based learning activities. Therefore, the implementation of Problem-Based Learning depends greatly on the teacher's ability to create a supportive learning environment, give clear guidance, and encourage students to participate actively.

### The Influence of Teacher Support on Student Learning Motivation

Based on the result of the study, teacher support does not have a direct effect on students' learning motivation. This finding indicates that learning motivation is a complex construct influenced by various factors beyond the teacher's role. Although teachers provide support in Learning, students' motivation to learn is also influenced by intrinsic interests, self-confidence, psychological conditions, family environment, and peer influence. According to the requirements of Ababil et al. (2025), student learning motivation is not formed by just one factor, but is the result of a combination of internal factors, such as students' interests and personal conditions, and external factors that come from the environment, such as family support, school, and teacher teaching methods. In the context of learning Akidah Akhlak, students' motivation is also related to the extent to which they perceive the material's relevance to their daily lives. Therefore, teacher support needs to be complemented by other strategies, such as a personal approach, instilling Islamic values, and creating meaningful learning experiences, so that students' motivation to learn can grow optimally.

### The Effect of Problem-Based Learning on Student Learning Motivation

The results of the study indicate the application of Problem-Based Learning. The findings show that the implementation of Problem-Based Learning does not directly increase students' learning motivation. This suggests that the use of a particular learning method does not automatically lead to higher motivation, especially when students are not fully prepared to engage in the learning model. Problem-Based Learning requires students to be active, critical, and independent throughout the learning process. However, some students may still be accustomed to conventional teacher-centered instruction, making it difficult for them to immediately adapt to more active and problem-oriented learning approach. In addition, limited learning time and students' experience with problem-based Learning can

also contribute to the low impact of this method on learning motivation. In learning Akidah Akhlak, students not only need cognitive understanding but also an appreciation of values and the habituation of attitudes. Therefore, the application of Problem-Based Learning needs to be tailored to students' characteristics and combined with other approaches that gradually foster interest and motivation to learn. The results of this study indicate that teacher support plays a central role in facilitating the implementation of Problem-Based Learning. However, increasing students' motivation to learn cannot be achieved solely through teacher support or a single learning method. Student learning motivation requires a more holistic approach that involves both internal and external factors. Therefore, teachers need to combine Problem-Based Learning with other learning strategies oriented towards strengthening motivation, such as providing positive reinforcement, instilling moral values, and creating a fun and meaningful classroom climate. These findings are expected to serve as evaluation materials for teachers in developing Akidah Akhlak learning, which focuses not only on methods but also on students' needs and characteristics.

## CONCLUSION

Based on the research results and discussions, teacher support is crucial to encouraging the use of the Problem-Based Learning method in Akidah Akhlak learning. Teacher support has been proven to help students understand problem-based Learning and create a more active and directed learning environment. This indicates that the success of implementing Problem-Based Learning is significantly influenced by teachers' involvement and role in the learning process. However, the study's results also show that teacher support has not directly affected students' motivation to learn. Additionally, the use of the Problem-Based Learning method has not significantly increased students' motivation to learn. Findings suggest that students' learning motivation is a complex construct influenced by factors beyond teacher support and instructional methods, including learning interests, psychological conditions, family environment, and students' prior learning experiences. Overall, this study emphasizes that the use of innovative learning methods should be accompanied by a more comprehensive approach to increase students' motivation to learn. Therefore, teachers are expected not only to focus on the application of learning methods but also to pay attention to the needs, characteristics, and conditions of students as a whole, so that the Learning of Akidah Akhlak can take place more meaningfully and effectively.

## ACKNOWLEDGEMENT

Thank you to the relevant parties, especially the Islamic Religious Education (PAI) Study Program, Faculty of Islamic Studies, Singaperbangsa University, Karawang.

## REFERENCES

- Ababil, K. M., Ramadhani, F., & Ginting, B. (2025). *Analisis Faktor-Faktor yang Mempengaruhi Motivasi Belajar Siswa pada Mata Pelajaran Pendidikan Agama Islam*. 2.
- Aslan, M., & Nurhayati, S. (2025). *Pembelajaran Akidah Akhlak dalam Pembentukan Karakter Religius Peserta Didik di Madrasah Aliyah Pondok Pesantren Darul Qur'an At-Taqwa Jampue*. 20(01), 96–115.

- Diandini, R. (2016). *Pendapat Siswa Tentang Pelaksanaan Model Problem Based Learning Pada Mata Pelajaran Tata Hidang Di SMK Negeri Baleendah.*
- Kurniawiti, E., & Rindrayani, S. R. (2025). *Pendekatan Kuantitatif dengan Penelitian Survei : Studi Kasus dan Implikasinya.*
- Maghfiroh, F. M. (2025). *Meningkatkan Hasil Belajar IPAS Dengan Model Problem Based Learning (PBL) Dengan Bantuan Peta Digital Pada Kurikulum Merdeka. Jurnal Inovasi Pendidikan Dasar Dan Menengah, 2(3), 196–204.*  
<https://doi.org/https://doi.org/10.71301/jipdasmen.v2i3.114>
- Maidiana. (2021). *Penelitian Survey. ALACRITY : Journal Of Education, 1(2), 20–29.*
- N Rahmadhiah, R. (2025). *Implementasi Integrasi Kecerdasan Profetik Berbasis Pendekatan Holistik Dalam Pembelajaran Akidah Akhlak di MIN 3 Lampung Selatan.*
- Nugroho, O. f., Hikmawaty, L., & Juwuta, S. R. (2025). *Analysis of Student Engagement in Project Based Learning in The Merdeka Curriculum. Pedagonal: Jurnal Ilmiah Pendidikan, 09(01), 49–59.*  
<https://doi.org/10.55215/pedagonal.v9i1.32>
- Rizqi, M. (2023). *Perubahan Sosial Budaya Dalam Modernisasi Dan Teknologi Dipandang Dari Proses Belajar. Jurnal Dinamika Sosial Budaya, 25(2), 233–239.*
- Sholihah, M., Rohmah, A. J., & Rif, M. (2025). *Analisis Penggunaan Metode Ceramah dalam Meningkatkan Pemahaman Siswa pada Mata Pelajaran Akidah Akhlak di MI Ajer. 2(1), 1–8.*
- Suhudi, Radeswandri, Herlinda, & Vebrito, R. (2024). *Pengembangan Instrumen Motivasi Belajar Siswa: Kuesioner. Jurnal Gentala Pendidikan Dasar, 9(1), 83–95.*
- Zahra, N. M., Wulandari, R., Ardiningrum. N. A., Nassyifa, F. I., & Supriatna, E. (2024). *Pengembangan dan Validasi Instrumen Teacher Support Pada Remaja. Jurnal Pendidikan Tambusai 8(2), 29390–29400*

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**Table 1** /Loading Factor Value

| Variable | Loading Factor | Remarks |
|----------|----------------|---------|
| DG1      | 0.845          | Valid   |
| DG2      | 0.567          | Invalid |
| DG3      | 0.747          | Valid   |
| DG4      | 0.574          | Invalid |
| DG5      | -0.239         | Invalid |
| PBL1     | -0.283         | Invalid |
| PBL2     | -0.480         | Invalid |
| PBL3     | 0.681          | Invalid |
| PBL4     | 0.783          | Valid   |
| PBL5     | 0.792          | Valid   |
| MB1      | 0.340          | Invalid |
| MB2      | 0.782          | Valid   |
| MB3      | 0.682          | Invalid |
| MB4      | 0.620          | Invalid |
| MB5      | 0.410          | Invalid |

(Source: Primary data processed by the researchers, 2025)

**Table 2** / EVE Value

| Variable               | Average Variance<br>Extracted (AVE) |
|------------------------|-------------------------------------|
| Teacher Support        | 0.783                               |
| Problem-Based Learning | 0.747                               |
| Learning Motivation    | 1.000                               |

**Table 3** / Fornell and Larcker Criterion Results

|                        | Teacher Support | Problem-Based Learning | Learning Motivation |
|------------------------|-----------------|------------------------|---------------------|
| Teacher Support        | 0.885           |                        |                     |
| Problem-Based Learning | 0.667           | 0.864                  |                     |
| Learning Motivation    | 0.223           | 0.231                  | 1.000               |

(Source: Primary data processed by the researchers, 2025)

**Table 4** / Variable Level Cross-Loading Values

|                               | <b>Teacher Support</b> | <b>Problem-Based Learning</b> | <b>Learning Motivation</b> |
|-------------------------------|------------------------|-------------------------------|----------------------------|
| <b>Teacher Support</b>        | 0.885                  |                               |                            |
| <b>Problem-Based Learning</b> | 0.667                  | 0.864                         |                            |
| <b>Learning Motivation</b>    | 0.223                  | 0.231                         | 1.000                      |

(Source: Primary data processed by the researchers, 2025)

**Table 5/** Values Variable Level HTMT Values

|                               | <b>Teacher Support</b> | <b>Problem-Based Learning</b> | <b>Learning Motivation</b> |
|-------------------------------|------------------------|-------------------------------|----------------------------|
| <b>Teacher Support</b>        |                        |                               |                            |
| <b>Problem-Based Learning</b> | <b>0.961</b>           |                               |                            |
| <b>Learning Motivation</b>    | <b>0.262</b>           | <b>0.281</b>                  |                            |

(Source: primary data processed by researchers, 2025)

**Table 6/** Composite Reliability Results

|                               | <b>Cronbach's Alpha</b> | <b>Composite Reliability</b> |
|-------------------------------|-------------------------|------------------------------|
| <b>Teacher Support</b>        | <b>0.723</b>            | <b>0.879</b>                 |
| <b>Problem-Based Learning</b> | <b>0.662</b>            | <b>0.855</b>                 |
| <b>Learning Motivation</b>    | <b>1.000</b>            | <b>1.000</b>                 |

(Source: primary data processed by researchers, 2025)

**Table 7/** Fit Summary Value

|                   | <b>Saturated Model</b> | <b>Estimated Model</b> |
|-------------------|------------------------|------------------------|
| <b>SRMR</b>       | 0.089                  | 0.089                  |
| <b>d_ULS</b>      | 0.119                  | 0.119                  |
| <b>d_G</b>        | 0.107                  | 0.107                  |
| <b>Chi-Square</b> | 26.687                 | 26.687                 |
| <b>NFI</b>        | 0.480                  | 0.480                  |

(Data source: primary data processed by researchers, 2025)

**Table 8/R-square value ( $R^2$ )**

|                               | R Square | R Square Adjusted |
|-------------------------------|----------|-------------------|
| <b>Problem-Based Learning</b> | 0.445    | 0.430             |
| <b>Learning Motivation</b>    | 0.062    | 0.010             |

(Source: primary data processed by researchers, 2025)

**Table 9** / Value F Square (F2)

|                        | Teacher Support | Problem-Based Learning | Learning Motivation |
|------------------------|-----------------|------------------------|---------------------|
| Teacher Support        |                 | 0.803                  | 0.009               |
| Problem-Based Learning |                 |                        | 0.013               |
| Learning Motivation    |                 |                        |                     |

(Source: primary data processed by researchers, 2025)

**Table 10** / Value F Square (F2)

|                               | SSO    | SSE    | $Q^2 (=1 - \text{SSE/SSO})$ |
|-------------------------------|--------|--------|-----------------------------|
| <b>Teacher Support</b>        | 78.000 | 78.000 |                             |
| <b>Problem-Based Learning</b> | 78.000 | 52.638 | 0.325                       |
| <b>Learning Motivation</b>    | 39.000 | 38.811 | 0.005                       |

(Source: primary data processed by researchers, 2025)

**Table 11** / Hypothesis Test Scores – Live

|                                                             | Original<br>Sample<br>(O) | Sample<br>Mean<br>(M) | Standard<br>Deviation<br>(STDEV) | T Statistics<br>( O/STDEV ) | P<br>Values |
|-------------------------------------------------------------|---------------------------|-----------------------|----------------------------------|-----------------------------|-------------|
| Teacher<br>Support- ><br>Problem-<br>Based<br>Learning      | 0.667                     | 0.674                 | 0.085                            | 7.893                       | 0.000       |
| Teacher<br>Support -><br>Learning<br>Motivation             | 0.123                     | 0.109                 | 0.182                            | 0.676                       | 0.499       |
| Problem-<br>Based<br>Learning -<br>> Learning<br>Motivation | 0.149                     | 0.169                 | 0.175                            | 0.849                       | 0.396       |

(Source: primary data processed by researchers, 2025)

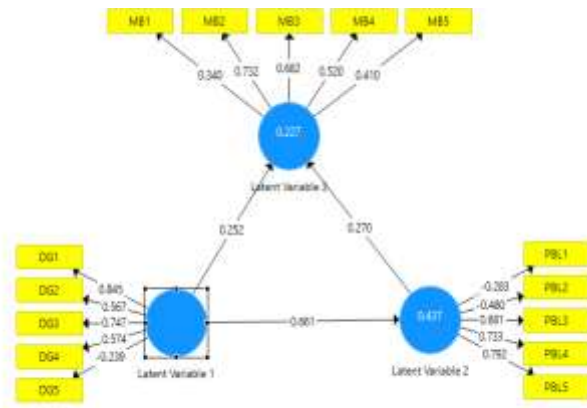
**Table 12** / Hypothesis Test Value -Scores

|                                                                                     | Original<br>Sample<br>(O) | Sample<br>Mean<br>(M) | Standard<br>Deviation<br>(STDEV) | T Statistics<br>( O/STDEV ) | P<br>Values  |
|-------------------------------------------------------------------------------------|---------------------------|-----------------------|----------------------------------|-----------------------------|--------------|
| Teacher<br>Support- ><br>Problem<br>Based<br>Learning -<br>> Learning<br>Motivation | 0.099                     | 0.118                 | 0.126                            | 0.788                       | <b>0.431</b> |

(Source: primary data processed by researchers, 2025)

LIST OF TABLES

1. Other Variable Level Model.....20

**Figure 1 / Other Variable Level Model**

(Source primary data, processed by researchers, 2025)