



## Al-Muhajirin International Conference

### Analysis of the integration of the PBL model assisted by Wordwall on students' learning independence in the perspective of the Qur'an

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#### **Abstract**

This study aims to analyze the integration of the problem-based learning (PBL) model assisted by the Wordwall application on students' learning independence from the perspective of the Qur'an. The research method used was descriptive analysis. The study was conducted in class VI B of Al-Fattah Islamic Elementary School. Data collection instruments included questionnaires, interviews, and observations. The questionnaire was administered before and after the implementation of PBL learning assisted by Wordwall. The results showed that the integration of the PBL model and the Wordwall application improved students' learning independence. Based on observation and interview results, students exhibited high learning independence as they demonstrated initiative in their learning and did not rely on others. Students showed responsibility by completing tasks on time and exhibited disciplined learning behavior. They also demonstrated awareness of the need to learn without being prompted by parents or teachers. In terms of self-confidence, students were courageous in expressing their opinions to peers and frequently engaged in self-reflection. These findings align with Qur'anic values: QS. Al-Isra' [17]: 84 highlights that everyone should act according to their abilities; QS. Al-Muddaththir [74]: 38 asserts that every individual is accountable for their actions; QS. Ar-Ra'd [13]: 11 states that change only occurs when individuals strive for it; and QS. Ali 'Imran [3]: 139 encourages believers to maintain confidence in their abilities.

**Keywords:** Learning independence; Qur'an; PBL; Wordwall

#### **INTRODUCTION**

Education serves as a medium to acquire knowledge and instill good behavior in students to prepare them for the outside world. The success of education largely depends on the quality of the learning process. Today's learning emphasizes critical thinking, creativity, communication, and collaboration skills. To master these skills, students need to possess a sense of learning independence. According to Basri H, independence is the condition in which an individual is capable of performing tasks on their own without assistance from others (Kamal & Rochmiyati, 2022).

Zimmerman's theory of self-regulated learning illustrates learning independence as an individual's ability to control and manage their own education. This includes planning effective learning strategies, monitoring learning progress, and having clear learning goals (Hariyadi et al., 2024). Learning independence is closely linked to a student's awareness of their educational needs and life goals. Students with strong

learning independence are more likely to recognize their potential and continuously improve themselves, thereby enhancing their personal value. This trait is essential for students to think critically during the learning process and to effectively deal with problems in their environment.

Learning independence is a fundamental aspect of the teaching and learning process. Imam Mashuri, as cited in Nugroho and Maulana (2021), emphasized that learning independence positively impacts students' cognitive, affective, and psychomotor development. Independent students tend to be creative, proactive, and responsible, which enables them to gain new experiences (Gusnita et al., 2021). Indicators of learning independence include taking initiative to study, not depending on others, being responsible in the learning process, maintaining discipline, having self-confidence, and conducting self-evaluation (Gea et al., 2022).

Based on an interview with the sixth-grade teacher at Al-Fattah Islamic Elementary School, it was found that students' learning independence remains low. The teacher reported that students frequently copied answers from peers and were reluctant to complete tasks voluntarily, even when instructed. Some even declined to present their work in front of the class. This situation highlights the urgent need for a learning model that can develop or strengthen students' learning independence. A suitable learning model can provide a practical reference for teachers in stimulating student engagement and autonomy during the learning process (Sugiano et al., 2020).

Problem-based learning (PBL) is an instructional model that begins with presenting a problem. This model guides students to explore real-world issues, thereby stimulating higher-order thinking skills (Widyastuti & Airlanda, 2021). The problems presented are usually related to students' daily lives. PBL also trains students to develop self-confidence and critical thinking (Cahyani et al., 2024). This model consists of five main syntax phases: orienting to the problem, organizing students to learn, guiding individual or group investigations, developing and presenting the work, and analyzing and evaluating the problem-solving process (Prasetya et al., 2022).

Today's educational practices are increasingly integrated with digital technologies, given the centrality of technology in many sectors, including education, healthcare, communication, and transportation. Therefore, incorporating digital tools such as the Wordwall application into learning is essential. Wordwall is an educational game-based application that facilitates both learning and evaluation. It promotes active student engagement through interactive game formats (Purnamasari et al., 2020). This application increases students' enthusiasm for learning and offers various game-based formats tailored to instructional needs (Yunita & Pratiwi, 2024).

This study aims to analyze the integration of the PBL model with the Wordwall application in fostering students' learning independence and its alignment with Qur'anic values. In particular, the study refers to the message in QS. Ar-Ra'd [13]:11, which emphasizes that change must come from individuals themselves, as Allah will not change a people's condition unless they strive to change it.

The research employed a descriptive analysis method. The subjects were 23 sixth-grade students from class VI B at Al-Fattah Islamic Elementary School. The focus of the research was the integration of the PBL model assisted by Wordwall and its impact on students' learning independence. The instruments used were a learning independence questionnaire, observations, and interviews. The questionnaire assessed various indicators, including initiative in learning, independence from others, self-confidence,

responsibility, discipline, and evaluation of learning processes and outcomes. The instrument was validated by two teachers from classes VI A and VI B. It was administered before and after the implementation of PBL assisted by Wordwall.

## DISCUSSION AND ANALYSIS

The following is a description of the research data collected at Al-Fattah Islamic Elementary School using questionnaires, observations, and interviews. The documentation of the learning implementation using the problem-based learning model assisted by Wordwall is as follows:



Figure 1 Student discussion process



Figure 2 Use of the Wordwall application

Figures 1 and 2 above depict the learning process utilizing the problem-based learning model with the assistance of the Wordwall application. This model was implemented in a mathematics lesson on multiplying fractions by whole numbers. Figure 1 illustrates the implementation of the third phase of PBL syntax, namely guiding the investigation. In this phase, students were divided into four groups, with each group receiving a different worksheet. Each student was encouraged to voice their ideas within their group to discuss how to solve the given problem. Meanwhile, Figure 2 shows the independent evaluation stage using the Wordwall application.

The outcomes of this model's implementation on students' learning independence are presented as follows.

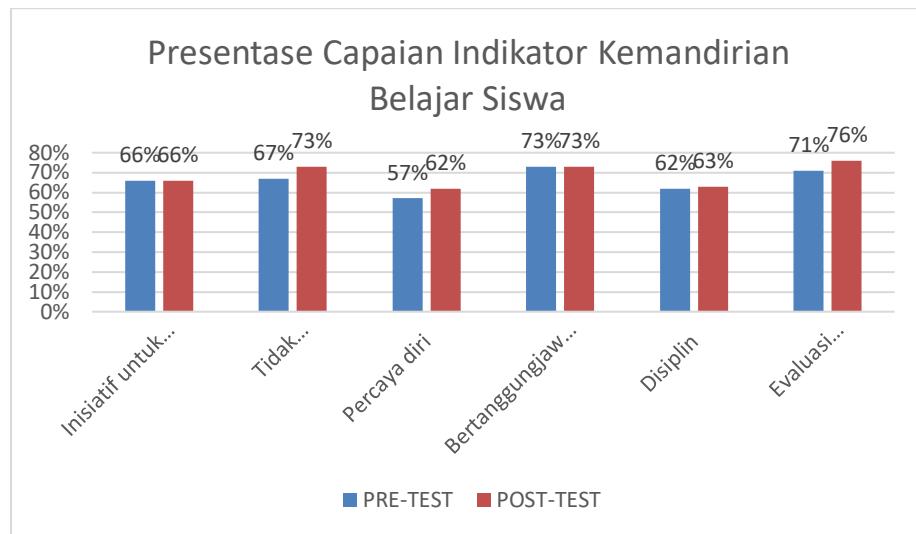


Figure 3 Achievement of learning independence indicators

Based on the graph above, along with the results of observations and student interviews, it was found that the integration of the PBL model assisted by Wordwall had a positive impact on students' learning independence. Regarding the indicator of learning initiative, this instructional approach reinforced students' independence in learning. This was evident from the graph, which showed that the percentage of students demonstrating initiative reached 66%. This result was supported by observational data collected during the implementation of the first PBL syntax, namely problem orientation. In this phase, students were provided with a stimulus to think and search for information independently through guiding questions and explanations delivered via a projector.

During the lesson, the teacher employed an interactive approach, integrating questions throughout the explanation. As a result, students listened attentively and responded to questions enthusiastically. The use of the Wordwall application also served as a learning stimulus, encouraging students to think independently by drawing upon their prior knowledge. This application includes engaging features that support student participation.

These findings are consistent with Zahroh *et al.* (2024), who asserted that implementing the PBL model with digital media enhances students' learning independence. This aligns with the concept of *self-directed learning*, which emphasizes the student's responsibility and initiative in managing their own education. This idea is also reflected in the Qur'anic verse QS. Ar-Ra'd [13]: 11:

مُهْسِنُا إِمَّا أُرْبَيْعُنَى شَهْرَ قِدْرِ أَمْ رُبْعَيْنَ لَا مُلْكَلَنْ!

*Indeed, Allah will not change the condition of a people until they change what is in themselves.*

According to the *Tafsir Al-Mishbah*, Prof. M. Quraish Shihab interprets this verse to mean that Allah will not change a people's circumstances—whether from happiness to misery or vice versa—until they begin to make changes within themselves. This begins with individuals expressing and spreading their ideas (Shihab, 2002e). In the context of learning independence, this is directly related to the initiative indicator: to

fully engage in the learning process, students must demonstrate the initiative to study independently.

### **Not depending on others**

Learning independence is a critical factor in fostering resilient character and reducing reliance on others (Sundari *et al.*, 2022). The integration of the PBL model assisted by the Wordwall application significantly improved students' independence in this regard. As shown in the graph, students' scores for the "not depending on others" indicator increased from 67 (pre-test) to 73 (post-test). This result was supported by interview data. Student A stated:

*"I like doing the exercises on my own, but sometimes I prefer to ask my friends because I'm afraid my answer might be wrong."*

Meanwhile, Student B expressed:

*"I like working on assignments by myself. I don't really like asking my friends. Even when someone gives me the answer, I won't use it, because I'm not sure if it's correct."*

These statements reflect a growing independence in students' learning attitudes. Furthermore, this independent behavior was encouraged during the third syntax of PBL—guiding the investigation—where students were placed in groups and instructed to solve problems collaboratively. The teacher encouraged each student to contribute ideas rather than relying on others.

During the evaluation phase using Wordwall, students were also trained to work independently, as the game-based quizzes required individual effort. This aligns with the values conveyed in QS. Al-Isra' [17]: 84:

مُهُسِّنًا بِأَمَّةٍ أُوْزِيَّ بِأَنْتَ هُوَ قِدَّمٌ رُّبَّعِيٌّ لَا مُلَالَنِ

*"Say, 'Each one acts according to his own disposition.' Then your Lord is most knowing of who is best guided in way." (QS. Al-Isra' [17]: 84)*

According to *Tafsir Al-Mishbah*, this verse explains that each individual acts according to their character, inclinations, and potential (Shihab, 2002f). In an educational context, this highlights the importance of recognizing each student's unique talents and encouraging them to act independently to reach their full potential.

### **Self-confidence**

The third indicator of learning independence is **self-confidence**. The implementation of the PBL model assisted by Wordwall showed positive changes in students' self-confidence, with scores increasing from 57 in the pre-test to 62 in the post-test. During the "guiding the investigation" phase, students were encouraged to exchange ideas within their groups to solve problems. In the next phase—"developing and presenting the results"—students were required to present their group's findings in front of the class.

This learning structure encouraged students to be more confident in expressing their ideas without hesitation or fear of being wrong. Many students even competed for the opportunity to present their work. According to Student B:

*“My favorite part of the lesson was when we were told to have a group discussion. We were given a word problem to solve, and I really enjoyed discussing it and sharing my ideas with my group members.”*

This aligns with the values found in QS. Āli ‘Imrān [3]: 139:

وَلَا تَهُنُوا وَلَا تَحْرُنُوا وَأَنْتُمُ الْأَعْلَوْنَ إِنْ كُنْتُمْ مُّؤْمِنِينَ

*“So do not weaken and do not grieve, for you will be superior if you are [true] believers.” (QS. Āli ‘Imrān [3]: 139)*

According to *Tafsir Al-Mishbah*, this verse is a divine command for believers not to be disheartened or saddened—particularly in the context of loss—encouraging them instead to strengthen their physical and mental resilience (Shihab, 2002d). In an educational setting, students are expected to overcome self-doubt and engage confidently in the learning process. Every student has the right and obligation to share opinions, express disagreement, and provide constructive criticism. A lack of self-confidence—such as fear, doubt, or hesitation—can negatively affect students' classroom interactions (Ulfah & Winata, 2021).

Wordwall contributes to this confidence by providing immediate feedback. Students receive real-time results on whether their answers are correct or incorrect, see their scores instantly, and even earn digital rewards, all of which increase motivation and self-assurance. As stated by Student A:

*“I really enjoyed the group discussions, using the laptop to explain the material was very easy to understand, and I loved the game on the Wordwall app—it was so fun!”*

### **Responsibility**

Next, the **responsibility** indicator was also strengthened through the implementation of the PBL model assisted by Wordwall. This is evident in the graph, where both the pre-test and post-test scores for this indicator remained consistent at 73%, indicating that students already had a relatively good sense of responsibility, which was maintained throughout the intervention. A sense of responsibility in learning is crucial, as it contributes to students' motivation and interest in learning, and encourages their participation in school activities (Siagian & Tambusai, 2023).

Throughout the learning process, students were required to demonstrate responsibility by actively participating in each phase and by completing both individual and group tasks diligently. The use of Wordwall also enabled teachers to assign individual tasks through the platform, while allowing them to monitor students' performance effectively.

Observations during the lessons showed that students became more responsible in completing both group and individual assignments. Interview responses also reflected this. For instance, Student A stated:

*“I like studying. Even if I don't have homework, I often read books or do practice questions, and I usually submit my assignments on time.”*

This statement demonstrates that the student possesses a responsible attitude toward their education and learning process. This aligns with the message of QS. Al-Muddaththir [74]: 38:

كُلُّ نَفْسٍ بِمَا كَسَبَتْ رَهِينَةٌ

*“Every soul is held in pledge for what it has earned.” (QS. Al-Muddaththir [74]: 38)*

According to *Tafsir Al-Mishbah*, this verse emphasizes that every human being is free to choose their path in life, but will ultimately be held accountable for their choices. Shaykh Muhammad Abdurrahman explained that every action, whether easy or difficult, requires a willingness to take responsibility (Shihab, 2002a). In an educational context, this implies that students have both the right and obligation to learn and develop their cognitive, affective, and psychomotor skills. Therefore, they must take full responsibility for their educational journey and make the most of every opportunity given.

### **Discipline**

The integration of the PBL model with the Wordwall application also positively influenced the **discipline** indicator. As shown in the graph, students' discipline scores reached 63, categorized as moderate. However, based on interviews conducted after the intervention, students who previously did not study according to a schedule began to study more consistently. Even without homework, students reported studying more regularly. Despite this progress, post-intervention observations indicated that several students still tended to talk during class activities.

Discipline can be defined as a student's ability to manage their time wisely by performing their responsibilities as scheduled. The PBL model consists of five systematically structured and sequenced syntax phases, which guide the learning process in a focused and organized manner. With the support of the Wordwall application, teachers can assign practice exercises through links that students can access at home. This approach promotes more regular and structured learning habits. Supporting this, research by Utami *et al.* (2022) concluded that using Wordwall in learning positively contributes to building students' character, including discipline.

The implementation of the PBL model assisted by Wordwall fostered greater discipline among students, as reflected in classroom observations. Students demonstrated improved punctuality in completing assignments, made better use of class time, and followed each phase of the learning process as planned. This aligns with the message conveyed in QS. Al-'Aṣr [103]: 1-2:

وَالْعَصْرُ  
إِنَّ الْإِنْسَانَ لَفِي خُسْرٍ

*“By time, indeed, mankind is in loss.” (QS. Al-'Aṣr [103]: 1-2)*

According to *Tafsir Al-Mishbah*, Prof. Quraish Shihab explained that time is the fundamental capital of human life. If not filled with meaningful and beneficial activities, it will pass by without yielding any return—resulting in loss, not just of benefit, but even of the initial capital (Shihab, 2002c). In the context of education, this emphasizes the importance of using time effectively to support students' academic and personal growth.

### **Evaluation of learning processes and outcomes**

The integration of the PBL model and the Wordwall application also had a positive impact on the **evaluation of learning processes and outcomes**. According to the graph, students' scores for this indicator reached 76, which falls into the high category. The evaluation stage in the PBL syntax involves reflection on both the learning process and outcomes, allowing students to analyze and express the knowledge they acquired during discussions and activities. Wordwall supports this reflection process through its automatic result recap feature,

enabling students to see their scores and rankings, which can be used as a basis for further improvement.

The implementation of this model led to observable improvements among students. They became more diligent in reviewing and correcting their work before submission and showed increased enthusiasm in studying to achieve better scores. These changes align with the Qur'anic value expressed in QS. Al-Hashr [59]: 18:

يَا أَيُّهَا الَّذِينَ آمَنُوا اتَّقُوا اللَّهَ وَلْتَنْتَرُ نَفْسٌ مَا فَدَمْثُ لِغَدٍ وَاتَّقُوا اللَّهَ إِنَّ اللَّهَ حَيْرُ بِمَا تَعْمَلُونَ

*“O you who have believed, fear Allah. And let every soul look to what it has put forth for tomorrow—and fear Allah. Indeed, Allah is Acquainted with what you do.”* (QS. Al-Hashr [59]: 18)

In *Tafsir Al-Mishbah*, this verse is interpreted as a divine instruction for individuals to evaluate their deeds, much like a carpenter reviewing his finished work—improving it if flawed, or enhancing it further if already good—so that the final product is of excellent quality (Shihab, 2002b). Similarly, in an educational context, students must consistently evaluate their participation, behavior, and academic performance to achieve optimal learning outcomes.

## CONCLUSION

The problem-based learning (PBL) model assisted by the Wordwall application helps students become more independent in their learning. This model encourages students to take the initiative in studying, act autonomously without being prompted by others, and engage more confidently in learning activities. Students also demonstrate responsibility in completing their assignments, appreciate the value of time by studying and attending lessons in a disciplined manner, and strive to improve their performance through self-reflection and continuous effort.

These outcomes are in line with the values conveyed in the Qur'an, which emphasize that Allah will not change a person's condition or elevate their status unless they make an effort themselves. These efforts include constant learning, making the best use of time, continuously evaluating oneself, developing one's potential, and being fully accountable for the education one is pursuing.

## SUGGESTIONS

Based on the findings of this study, it is suggested that the integration of the PBL model assisted by the Wordwall application and grounded in Islamic values from the Qur'an can be effectively implemented by teachers in the learning process. This approach has the potential to foster greater student independence and character development, while also creating a more interactive and initiative-driven classroom environment.

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