Effectiveness of Self-Regulated Learning-Based Instruction: Enhancing Student Learning Autonomy (Study on LMS Syam-Ok UNM)

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ABSTRAK

Kata kunci: Kemandirian Belajar, Model Pembelajaran, Regulasi Diri, Mahasiswa, Pendidikan.

ABSTRACT
Learning autonomy is becoming essential in the 21st century, demanding individuals to master various fundamental skills. This article explores the self-regulated learning model as a solution to enhance student learning autonomy. A case study conducted in the music arts course at Universitas Negeri Makassar found that students' learning autonomy levels were still low, even among those considered active. Related research also confirms the low learning autonomy of students across various settings. The research methodology employed an experimental approach with a one-group pretest-posttest design. Data collection was carried out by observing student activities through a Learning Management System (LMS) before and after modifying instructional methods. Data analysis results showed a significant difference between pretest and posttest scores, with a notable increase in posttest scores. The findings indicate an improvement in student learning autonomy. Learning autonomy fosters the desire to learn and acquire new knowledge, facilitates individual ownership of learning, and enhances learning independence. The study concludes that modifying instructional methods based on the self-regulated learning model effectively improves student learning autonomy.

Keywords: Learning Autonomy, Learning Models, Self-Regulation, Students, Education.

In Indonesia, the education system has evolved towards greater inclusivity and openness, evidenced by Indonesia's participation in the PISA (Program for International Student Assessment) survey since 2000. The latest PISA results from 2018 show a decline in Indonesia's average scores in several competencies compared to 2015. The survey findings indicate that one of the factors contributing to this decline is the lack of active learner participation. Therefore, comprehensive improvements across all aspects are necessary to address this issue.

A preliminary study in a music arts course conducted through the Syam OK Learning Management System in the PGSD program at Universitas Negeri Makassar revealed that out of 39 observed students, 51.28% were in the medium category, 35.89% were in the very low category, and only 2.56% were in the high category. This data indicates that the level of learning autonomy is still low. Even among students with high learning activity, only the task completion indicator was met, while indicators such as reading materials, information searching, idea expression in discussion forums, problem-solving methods, and originality of work were still very low.

Related research in different contexts, such as Hariyanto D, et al. (2012), studying the learning autonomy of Building Engineering Education students at Universitas Negeri Jakarta, found that students lacked initiative when they had limited teaching materials and tended not to utilize library facilities, needing encouragement for independent study at home, and relying only on materials provided by lecturers. Additionally, Winda Lestari (2020) researched learning autonomy at Universitas Sriwijaya through a questionnaire distributed via Google Forms on August 29, 2021, to 27 respondents. The results showed that: 1) 96.3% of students lacked high concentration, 2) 40.7% were unprepared before doing anything, 3) 70.4% occasionally searched for other learning sources only when directed by lecturers, 4) 18.5% took notes only when directed by lecturers, 5) 85.2% lacked the courage to express responses, 6) 70.4% sometimes delayed tasks, 7) 81.5% often asked others when facing difficult tasks, and 8) 81.5% were sometimes not optimal in their studies. Thus, it can be concluded that student learning autonomy remains low.

RESEARCH METHOD
This study is an experimental research using a one-group pretest-posttest design. The sample consists of 30 students selected through simple random sampling. Data collection was conducted by observing student activities via the result activity feature provided by the LMS Syam OK. The data analysis technique employed N-Gain analysis and simple regression statistical analysis to identify the differences before and after the instructional modifications were implemented.

RESULTS AND DISCUSSION
Result
The effectiveness of the model was measured based on the observational data of students’ independent learning activities before and after the implementation of the model. This can be depicted in the following table:

<table>
<thead>
<tr>
<th>respondents</th>
<th>N gain value for testing the effectiveness of the self-regulation-based learning model.</th>
<th>ket</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pretest</td>
<td>post test</td>
</tr>
<tr>
<td>1</td>
<td>88</td>
<td>142</td>
</tr>
<tr>
<td>2</td>
<td>88</td>
<td>140</td>
</tr>
<tr>
<td>3</td>
<td>83</td>
<td>141</td>
</tr>
<tr>
<td>4</td>
<td>93</td>
<td>140</td>
</tr>
<tr>
<td>5</td>
<td>87</td>
<td>138</td>
</tr>
<tr>
<td>6</td>
<td>82</td>
<td>139</td>
</tr>
<tr>
<td>7</td>
<td>94</td>
<td>138</td>
</tr>
<tr>
<td>8</td>
<td>79</td>
<td>139</td>
</tr>
</tbody>
</table>

Table 1. data pretest post test and Gain analisis
The data provided is an analysis of N gain to determine the extent of the difference between pretest and posttest scores. The data can be interpreted as follows: Initial Variable (Pretest); the average pretest score is 83.70, and the maximum possible pretest score before intervention is 156.00. Final Variable (Posttest); the average posttest score is 140.17, and the maximum possible posttest score after intervention is 156.00. Difference Between Pretest and Posttest; the average difference between posttest and pretest scores is 56.47, and the average difference as a percentage of the maximum score before intervention is 72.30%. N Gain Value; The average N gain score is 0.78, and the average N gain score as a percentage is 77.77%. Additionally, 83.33% of respondents are indicated to be effective after the model implementation. The majority of respondents fall into the effectiveness classification category E (Effective).

The next step involved conducting a t-test using the paired sample T-test, which yielded the following results:

Table 2. Results of Paired Sample T-Test for the Effectiveness of the instructional based on Self-Regulated Learning

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Std. Error Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95% Confidence Interval of the Difference</td>
<td>Lowe r</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td>angket pre test - angket posttest</td>
<td>56.4</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>6667</td>
<td>408</td>
<td>926</td>
</tr>
</tbody>
</table>
The description of the paired sample t-test results on the data above means that the mean difference between the pre-test and post-test questionnaires is -56.46667. The standard deviation of the difference between the two groups is 8.45570. The standard error mean of the difference is 1.54379. The 95% Confidence Interval of the Difference for the pre-test and post-test groups is -59.62408 to -53.30926. The t-value used in the hypothesis test is -36.577. The degrees of freedom (df) is 29. The significance value (p-value) of this test is 0.000.

Based on these data, it can be interpreted that there is a significant difference between the pre-test and post-test questionnaires. The mean difference between the two groups is -56.46667, indicating that the scores on the post-test questionnaire tend to be higher than those on the pre-test questionnaire. The relatively low standard deviation (8.45570) indicates that the difference between the two groups is relatively stable. The very low t-statistic value (-36.577) shows that the difference is statistically very significant. The very low significance value (p-value) (0.000) indicates that the difference between the two groups did not occur by chance and can be considered significant. Based on the analyzed findings, it can be explained that the self-regulation-based learning model emphasizes the active role of students in learning. This instruction focuses on how students can control, direct, and regulate their own learning process. The data showing an increase in post-pre scores and a high N Gain reflects the effectiveness of this model. Students appear to be able to utilize self-regulation strategies to improve their understanding and performance (Zimmerman & Schunk, 2011).

Considering the data analysis results, from a constructivist perspective on learning, it is believed that individuals do not come to class with empty minds but with many strongly formed ideas about how the world works. From a constructivist perspective, learners should no longer be passive recipients of knowledge delivered by teachers, and teachers should no longer be mere suppliers of knowledge and classroom managers (Kay Livingston, 2012). Furthermore, from this perspective, learning can be said to be an active and complex process of acquiring new knowledge. It results from the active interaction of main cognitive processes. It is also an active interaction between lecturers.

Discussion

The results of the study related to the effectiveness of the self-regulation-based learning model reveal that there is a significant difference between the pre-test and post-test questionnaires. The average difference between the two groups is -56.46667, indicating that the scores on the post-test questionnaire tend to be higher than those on the pre-test questionnaire. The relatively low standard deviation (8.45570) indicates that the difference between the two groups is relatively stable. The very low t-statistic value (-36.577) shows that the difference is statistically very significant. The very low significance value (p-value) (0.000) indicates that the difference between the two groups did not occur by chance and can be considered significant. Based on the analyzed findings, it can be explained that the self-regulation-based learning model emphasizes the active role of students in learning. This instruction focuses on how students can control, direct, and regulate their own learning process. The data showing an increase in post-pre scores and a high N Gain reflects the effectiveness of this model. Students appear to be able to utilize self-regulation strategies to improve their understanding and performance (Zimmerman & Schunk, 2011).

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and students, with students trying to understand what they are learning by adjusting it to their own experiences (Wing, W., & Mui, S., 2002).

Self-regulation-based learning instruction indicates the application of constructivism principles Bandura, A. (1978), which essentially provide wider autonomy to individual learners to develop their potential through curiosity and inquiry. All of this can be well achieved if the learning process is given proper instruction, facilitated with good stimulus, and accompanied by enthusiastic, intelligent, and appreciative instructors (Barlia, 2009). This self-regulation-based learning instruction emphasizes directing learners towards ownership of their learning Jossberger H(2010), building their knowledge through active experiences in interaction with their environment and learning content (Pintrich & de Groot, 1990). The increase in post-pre scores can be interpreted as a result of learners constructing new knowledge. The use of the self-regulation-based learning model can facilitate this construction process because individuals take an active role in regulating their learning (Porath & Bateman, 2006).

The increase in scores and high N Gain also indicates that students feel in control of their learning and experience significant progress, their learning independence tends to increase (Denton & Brownhill, 2017). The self-regulation-based learning model may help maintain students' interest and motivation. Moejijat (2002:9) explains that the needs and desires within an individual add to their internal motivation. These forces influence them by determining their thoughts, which subsequently guide their behavior into a particular situation Corey, Gerald (1995). In the learning process with this instruction, self-regulation plays an important role in forming learning ownership, thus providing stimulation, enthusiasm, and joy in learning, so that those with high motivation have a lot of energy to carry out the learning process (Sharma, Dick, Chin, & Land, 2007). Learning motivation can arise due to intrinsic factors or internal factors driven by the desire to learn, expectations, and aspirations (Iskandar, 2009:180).

Learning independence arises from self-desire and self-awareness. Learning independence is also driven by the goals of the activities undertaken (de Bruin & van Gog, 2012). Learning certainly has a goal, which is to become knowledgeable and achieve better grades Brockett, R. G., & Hiemstra, R. (2018). A student who studies diligently because they want to gain knowledge and understanding. Learning independence can be seen as a form of motivation that starts from an internal drive to gain something important from the learning activities (Meyer, 2010). Based on the results of research using the self-regulation-based learning model, several factors influence the emergence of learning independence, which also impacts an individual's drive to learn Butler, D. L., & Winne, P. H. (1995). As outlined in this model phase, independence can arise if individuals know their potential, understand their learning objectives, create an environment suitable to their learning needs, know the extent of their learning achievements, and recognize the obstacles and supports to their learning achievements (Winne & Perry, 2000). This aligns with Iskandar’s statement (2009:189), which states that if individuals who learn can develop learning independence within themselves, they will at least find several things: awareness that becomes a driving force and strength for themselves to engage in learning activities related to their current and future needs and usefulness.

**CONCLUSION**

The results of the effectiveness test using the paired sample T-test show that the self-regulation-based learning model indicates that the intervention using self-regulation-based learning instruction has a positive impact on students' learning independence. The high N Gain test results indicate that the self-regulation-based learning instruction contributes significantly to the increase in students' learning independence.

**REFERENCES**


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