

The Implementation of the Teaching at the Right Level (TaRL) Approach in Improving Students' Mathematics Learning Outcomes

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Abstract: This study aims to improve student learning outcomes by implementing the Teaching at the Right Level (TaRL) approach. The subjects of the study were 36 students from class X.8 at SMAN 1 Mataram, located in Mataram City. The research employed a Classroom Action Research (CAR) method conducted over two cycles. Each cycle included the stages of planning, action, observation, and reflection. The result showed a significant improvement in student learning outcomes from the pre-cycle to cycle I and cycle II. In the pre-cycle, only 58,33% of the students met the mastery criteria, with an average score of 78,47. After applying the TaRL approach in cycle I, the mastery percentage increased to 69,44, with an average score of 80,30. In cycle II, the mastery reached 91,66%, with an average score of 84,55. Based on these findings, it can be concluded that the implementation of the TaRL approach is effective in improving students' mathematics learning outcomes.

Keywords: Teaching at the Right Level, Learning Outcomes, Mathematics.

Introduction

Education is one of the primary factors in shaping quality human resources. In Indonesia, efforts to improve the quality of education continue through various policies and new approaches. However, in practice, many students at certain educational levels still face difficulties in achieving adequate learning outcomes. One of the factors contributing to these learning challenges is the disparity between students' competency levels and the teaching methods applied in schools.

Learning outcomes, according to Bloom (1956), refer to behavioral changes in learners encompassing the cognitive, affective, and psychomotor domains following the learning process. Sudjana (2009) further elaborates that learning outcomes reflect the competencies acquired by learners after engaging in educational experiences, including knowledge, comprehension, skills, and attitudinal changes. These outcomes can be assessed through evaluations to determine the extent to which learning objectives have been achieved. In conclusion, learning outcomes serve as indicators of the success of the educational process, characterized by measurable transformations in learners' knowledge, skills, and attitudes.

To address the issue of low student learning outcomes, the Teaching at the Right Level (TaRL) approach has emerged as a potential solution. TaRL emphasizes the importance of instruction tailored to students' actual competency levels. According to Banerjee et al. (2016), TaRL aims to group students based on their academic abilities rather than age or grade, enabling teachers to deliver more precise and effective instruction. This aligns with the principle that each student has unique potential and requires learning strategies adapted to their individual needs.

The TaRL approach has been implemented in various developing countries, such as India and Africa, with notable success in improving students' academic achievement (Banerjee et al., 2016). Further supporting the effectiveness of TaRL, a study conducted by Muralidharan and Glewwe (2016) demonstrated that instruction tailored to students' needs significantly enhances educational quality. Additionally, this approach encourages teachers to better understand students' needs and abilities through regular formative assessments. This is crucial in ensuring that learners receive appropriate support tailored to their academic requirements.

Based on the results of the initial diagnostic test conducted, the following score data were obtained, as presented in Table 1.

Table 1. Initial diagnostic test scores of Mathematics class X.8 SMAN 1 Mataram

No	Value	Number of Students
1	60-64	3
2	65-69	2
3	70-74	8
4	75-79	3
5	80-84	10
6	85-89	7
7	90-94	3
Total		36

According to the data presented in Table 1, it can be observed that some students still scored below the Minimum Mastery Criteria (MMC) of 78. Table 1 indicates that 15 students scored below the MMC, while 25 students achieved scores above the MMC.

Based on field data and direct observations during the teaching practicum at SMAN 1 Mataram, some students still experience difficulties in comprehending the taught material, particularly in Mathematics. Several students have not been able to engage optimally in the learning process due to varying levels of understanding. This has resulted in some learners falling behind in grasping fundamental concepts that are essential for mastering subsequent topics.

Thus, this study aims to explore how the implementation of TaRL (Teaching at the Right Level) can enhance the learning outcomes of students in class X.8 at SMAN 1 Mataram, as well as identify the supporting and inhibiting factors in applying this approach in schools. The findings of this research are expected to provide valuable recommendations for school administrators and educational policymakers in efforts to improve the quality of education in Indonesia.

Method

This study was conducted at SMAN 1 Mataram, Mataram City, West Nusa Tenggara. The research subjects were students of Class X.8 at SMAN 1 Mataram in the 2023/2024 academic year, with a total of 36 participants. The research focus was students' learning outcomes following the implementation of the Teaching at the Right Level (TaRL) approach in mathematics instruction. The study employed a classroom action research (CAR) design. Classroom action research refers to the observation of learning processes involving deliberately planned interventions carried out within a classroom setting (Arikunto, 2008).

This research was conducted through multiple cycles, beginning with a preliminary cycle, followed by

improvements in the learning process through the implementation of actions in Cycle I, which were further refined in Cycle II. According to Kemmis and McTaggart (1988), classroom action research consists of four main stages: planning, action, observation, and reflection. These stages are implemented cyclically, where the reflection outcomes from each cycle inform the planning of corrective actions for subsequent cycles.

Machali (2022) elaborates on each step as follows:

1. Planning refers to a series of activities designed to enhance learning quality based on identified classroom issues;
2. Action involves controlled interventions aimed at improving skills, comprehension, collaboration, and fostering a more conducive learning environment;
3. Observation entails the systematic documentation of the impacts of implemented actions, conducted in a measurable, flexible, and open manner;
4. Reflection involves a critical review of the executed actions and their recorded observational outcomes.

The following is an overview of the procedure for implementing classroom action research consisting of two cycles.

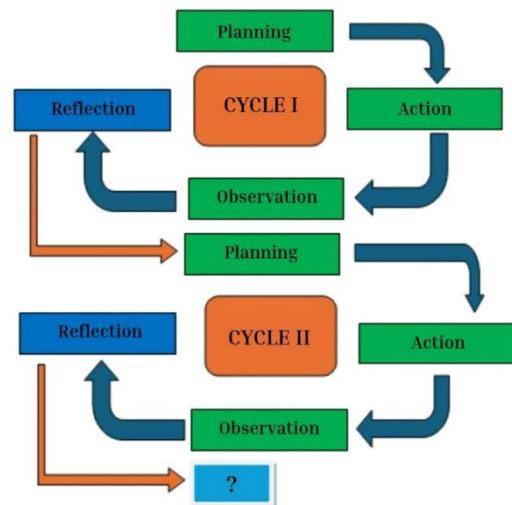


Figure 1. Kurt Lewin's Classroom Action Research Cycle Model

The improvement of learning outcomes of students of class X.8 SMAN 1 Mataram was analysed descriptively qualitatively by focusing on the average score and the percentage of completeness. To calculate the percentage of completeness, the following formula was used.

$$\%K_t = \frac{\sum T_p}{n} \times 100\% \tag{1}$$

Description:

$%K_t$: Percentage of Completion

$\frac{\sum T_p}{n}$: Number of individual completions

n : Number of learners

Results and Discussion

Result

Observation conducted in Class X.8 of SMAN 1 Mataram during the Even Semester of the 2023/2024 Academic Year utilized an initial diagnostic test to assess students' foundational understanding of basic mathematics. This diagnostic test aimed to identify learning difficulties faced by students, enabling teachers to design tailored instructional strategies according to each student's proficiency level. The observation results serve as the basis for implementing the Teaching at the Right Level (TaRL) approach to enhance student learning outcomes. The diagnostic test results are recorded as pre-cycle learning outcomes. Below is the analysis of the diagnostic test results (pre-cycle phase).

Table 2. Recapitulation of Learning Outcomes (Pre-Cycle)

No.	Criteria	Result
1.	Average value	78,47
2.	Max value	90
3.	Min value	60
5.	Complete	21
6.	Incomplete	15
7.	Percentage of completeness	58,33%
8.	Percentage of incompleteness	41,67%

Based on the recapitulation of data presented in Table 2, it was found that the average score and the percentage of students who achieved mastery were still relatively low. This indicates that the learning outcomes obtained by the students remain suboptimal. Out of 36 students in Class X.8, 21 students (58.33%) met the mastery criteria, while 15 students (41.67%) did not. The average score in the pre-cycle was 45.31. Below is the histogram depicting the percentage of students' learning mastery in the pre-cycle, as shown in Figure 2.

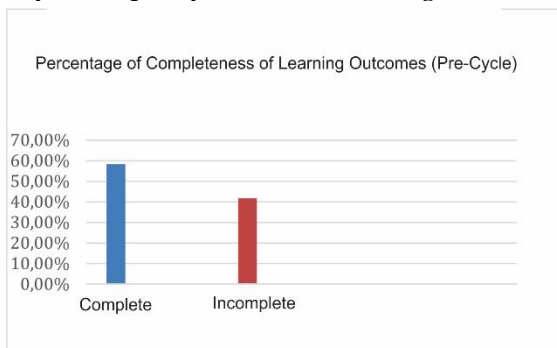


Figure 2. Percentage of Completeness of Learning Outcomes (Pre-Cycle)

The next stage is to carry out the stages of classroom action in cycle I. After conducting and completing learning by using the Teaching at the Right Level (TaRL) approach, data on student learning outcomes in cycle I were obtained as follows:

Table 1. Recapitulation of Learning Outcomes (Cycle I)

No.	Criteria	Result
1.	Average value	80,30
2.	Max value	92
3.	Min value	63
5.	Complete	25
6.	Incomplete	11
7.	Percentage of completeness	69,44%
8.	Percentage of incompleteness	30,56%

Based on the recapitulation of data presented in Table 3, it was found that the average score and the percentage of student mastery increased significantly. This indicates an improvement in learning outcomes after implementing the Teaching at the Right Level (TaRL) approach. Out of 36 students in class X.8, 25 students (69.44%) achieved the mastery threshold, while 11 students (30.56%) did not meet the passing criteria. The average score in Cycle I was 80.30. Additionally, Figure 3 presents a histogram of the percentage distribution of student learning mastery in Cycle I.

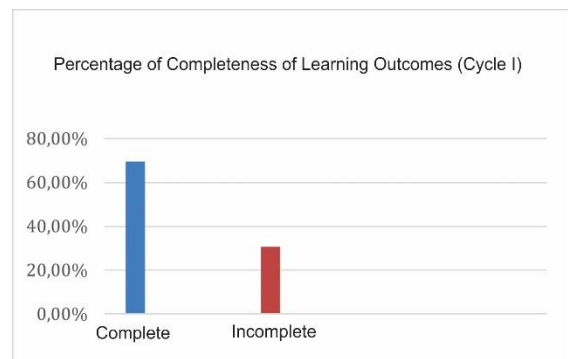


Figure 1. Recapitulation of Learning Outcomes (Cycle I)

The data obtained in Cycle I demonstrated an improvement in student learning outcomes following the implementation of the intervention. However, the results were still considered unsatisfactory as the mastery rate had not yet reached 80%. Consequently, the research proceeded to Cycle II based on reflections and improvements from the previous cycle. After implementing the intervention in Cycle II, the following student learning outcome data were obtained:

Table 2. Recapitulation of Learning Outcomes (Cycle II)

No.	Criteria	Result
1.	Average value	84,55
2.	Max value	95
3.	Min value	69
5.	Complete	33
6.	Incomplete	3
7.	Percentage of completeness	91,66%
8.	Percentage of incompleteness	8,34%

Based on the recapitulation results presented in Table 4, it was found that the mean score and percentage of students achieving mastery showed significant improvement from the previous cycle. Out of 36 class X.8 students, 33 students (91.66%) achieved the mastery threshold, while only 3 students (8.34%) had not yet reached mastery. The mean score in Cycle II increased compared to Cycle I, rising to 84.55. Figure 4 presents the histogram of student learning mastery percentages in Cycle II.

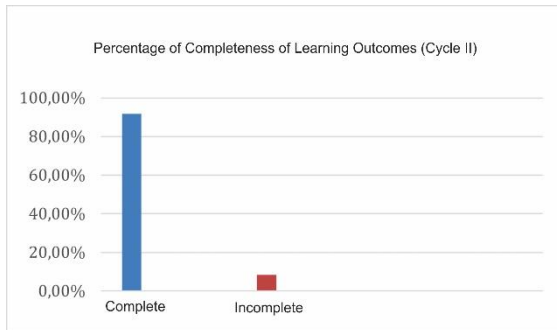


Figure 2. Recapitulation of Learning Outcomes (Cycle II)

According to the results of data recapitulation from pre-silus, cycle I and cycle II, it was found that there was an increase at each stage of the class action research cycle carried out. The increase in data can be seen in the following table.

Table 3. Recapitulation of the Percentage of Completeness of Learning Outcomes

Criteria				Description
	Pre-Cycle	Cycle I	Cycle II	
Average value	78,47	80,30	84,55	Increase
Percentage of completeness	58,33 %	69,44 %	91,66 %	Increase

Discussion

Based on the classroom action research conducted over several cycles, which included the stages of planning, implementation (action), observation (review of results), and reflection, it was concluded that the application of the Teaching at the Right Level (TaRL) approach successfully improved students' mathematics learning outcomes. In the pre-cycle stage, the mastery

percentage was still low, with only 21 out of 36 students (58.33%) achieving the passing grade, while 15 students (41.67%) had not yet met the mastery standard. The average score obtained at this stage was 78.47.

Seeing these results, learning actions using the Teaching at the Right Level (TaRL) approach were applied in cycle I. The evaluation results showed an improvement, with 25 learners (69.44%) achieving a complete score, while 11 learners (30.56%) were not yet complete. The average score also increased to 80.30. However, because the percentage of completeness has not yet reached the set indicator of 80%, cycle II was implemented.

In cycle II, improvements were made based on the evaluation of cycle I, including directing students to be more focused and cooperate well in groups, besides not forgetting to be reminded to be more careful in calculating the answers to questions. The results of cycle II showed a significant increase, with 33 learners (91.66%) achieving a complete score, while 3 learners (8.34%) were not complete. The average score increased to 84.55, and the percentage of completeness had reached the target, so the research was considered complete.

Based on the results of the two cycles, it can be concluded that the application of the Teaching at the Right Level (TaRL) approach is able to increase students' interest and active participation, which in turn contributes to improving learning outcomes.

Conclusion

Based on the results of the research presented, it can be concluded that the use of the Teaching at the Right Level (TaRL) approach in increasing the activeness of students during the learning process, which ultimately contributes to improving student learning outcomes. This Classroom Action Research (PTK) in accordance with the data and analysis that has been done, shows that the application of the Teaching at the Right Level (TaRL) approach succeeded in improving the mathematics learning outcomes of students in class X.8 SMAN 1 Mataram, from 58.33% at the pre-cycle stage to 69.44% in cycle I, and increased again to 91.66% in cycle II.

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References

Arikunto, S. (2008). *Penelitian tindakan kelas*. Jakarta: Bumi Aksara.
 Banerjee, A., Cole, S., Duflo, E., & Linden, L. (2007). *Remedying education: Evidence from two randomized*

- experiments in India. The Quarterly Journal of Economics*, 122(3), 1235–1264.
- Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals*. New York, NY: David McKay Company.
- Glewwe, P., & Muralidharan, K. (2016). *Improving education outcomes in developing countries: Evidence, knowledge gaps, and policy implications*. In E. A. Hanushek, S. Machin, & L. Woessmann (Eds.), *Handbook of the economics of education* (Vol. 5, pp. 653–743). Elsevier.
- Kemmis, S., & McTaggart, R. (1988). *The action research planner* (3rd ed.). Victoria: Deakin University Press.
- Sudjana, N. (2009). *Penilaian hasil proses belajar mengajar*. Bandung: PT Remaja Rosdakarya.