



The Role of Accompanying Teachers in Improving Students' Achievement on the Topic of Growth and Development at SMP Negeri 6 Banda Aceh

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Abstract: This study aims to describe the role of accompanying teachers in improving students' learning achievement on the topic of Growth and Development at SMP Negeri 6 Banda Aceh. The research employed a quantitative approach using a quasi-experimental method. The subjects consisted of 32 students of Grade VII-8 in the 2025/2026 academic year. Data were collected through learning achievement tests (pre-test and post-test), observation of learning activities, and interviews with the accompanying and biology teachers. Data analysis was conducted descriptively and inferentially using the Normalized Gain (N-Gain) formula to determine the improvement in students' learning outcomes. The results showed a significant improvement in student achievement, with the average pre-test score of 60 increasing to 88-90 on the post-test. The presence of an accompanying teacher played an important role in creating an active and structured learning atmosphere, supporting students who experienced learning difficulties. Collaboration between the accompanying teacher and the biology teacher in planning, implementing, and evaluating the learning process proved effective in enhancing students' conceptual understanding, motivation, and learning outcomes on the topic of growth and development. Therefore, it can be concluded that accompanying teachers play a strategic role in improving students' learning achievement through academic, motivational, and collaborative assistance in the classroom. The application of this mentoring model can serve as an effective alternative to enhance the quality of science learning at the junior high school level.

Keywords: Accompanying teacher; Biology learning; Growth and development; Learning Achievement

Introduction

Student learning achievement is one of the main indicators of the success of the learning process in schools, as it reflects how well students understand and master the materials provided (Akmaluddin et al., 2019; Ariandara, 2018; Elly R., 2016; Fakhtur, 2018; Mubayyinah, 2020; Rahmat et al., 2017; Rince et al., 2021). In the subject of Biology – particularly on the topic of growth and development of living organisms –

students often face difficulties in understanding the concepts thoroughly. These difficulties arise from several factors, such as limited teaching methods, minimal opportunities for active interaction and discussion, and a lack of critical thinking skills required to analyze biological phenomena scientifically (Kharizmi, 2022).

In this context, the role of the accompanying teacher becomes essential. The accompanying teacher acts as a facilitator and motivator, not only providing additional

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explanations but also guiding students in applying effective learning strategies (Almukarramah et al., 2024; Bernawati, 2019; Husna et al., 2021; Jainiyah et al., 2023). The presence of the accompanying teacher enables more intensive interaction between teachers and students, helping students overcome learning difficulties while encouraging critical and creative thinking (Buan, 2020; Kharisma et al., 2019; Mursalin et al., 2017; Nurhasanah et al., 2021). Previous studies have shown that learning interventions involving accompanying teachers significantly improve students' conceptual understanding, critical thinking skills, and learning outcomes (Akmal et al., 2025; Anggraini et al., 2016; Ibrahim et al., 2025).

The involvement of teachers and learning media is an important intermediary tool for students as a link/means in conveying messages to recipients from the sender of the message (Sufi et al., 2025). Learning media is an intermediary, tool, means, and link to convey, disseminate, or carry all messages or ideas, so that it can stimulate feelings, thoughts, actions, interests, and attention of students so that learning takes place. Teachers and learning media can be a very useful learning resource for the learning process of students (Almukarramah et al., 2024; Maimunawati et al., 2020; Widodo et al., 2020).

Based on this background, the present study aims to analyze the role of accompanying teachers in improving students' achievement in the topic of growth and development of living organisms at SMP Negeri 6 Banda Aceh (Sutarto, 2020; Ummah, 2019). This research is expected to provide empirical evidence on the effectiveness of accompanying teachers in supporting the learning process and improving the quality of biology education at the junior high school level (Aedi, 2010; Arikunto, 2019; Sugiyono, 2018).

Method

This study was conducted at SMP Negeri 6 Banda Aceh in the subject of Biology, focusing on the topic of growth and development of living organisms, from

February to March 2025. The sample consisted of 32 students selected through purposive sampling based on class and active participation in learning. Learning achievement data were collected through pre-tests and post-tests. The pre-test was administered before the accompanying teacher's intervention, while the post-test was given after students received additional guidance. The tests consisted of multiple-choice and essay questions, and each student's score was calculated and recorded.

Data were analyzed using descriptive and quantitative methods to determine the improvement in learning outcomes. Statistical analysis involved calculating the percentage of improvement (gain), and comparisons were made between pre-test and post-test scores using the Normalized Gain (N-Gain) formula (Hake, 1998):

$$N - Gain = \frac{\text{Score Posttest} - \text{Score Pretest}}{\text{Score Maximal} - \text{Score Pretest}} \quad (1)$$

The results were categorized as follows: High: $g > 0.70$; Moderate: $0.30 < g \leq 0.70$; and Low: $g \leq 0.30$.

This formula was used to determine the level of improvement in students' achievement after receiving guidance from the accompanying teacher. Descriptive analysis was also performed to observe score distribution, individual progress, and the effectiveness of the intervention on students' understanding of biological concepts (Huberman et al., 2014).

Result and Discussion

The improvement in students' learning achievement following the assistant teacher's guidance demonstrates the effectiveness of the intervention in the learning process. The average pre-test score of 60 increased to 88-90 in the post-test, reflecting an improvement of approximately 46-50%. This indicates that most students were able to understand the topic of growth and development of living organisms more effectively after receiving additional guidance. When analogized using an ecological concept:

Table 1. Student Learning Outcomes

Student Name	Pre-test	Post-test	Gain	N-Gain	Description
Aghil Munawar	68	92	24	0.75	High
Alvi Syahrin	68	92	24	0.75	High
Anis Usrah	80	96	16	0.80	High
Athif Basri	68	88	20	0.63	Moderate
Azqiya Natuwah	80	92	12	0.60	Moderate
Azqyral Al Miski	80	86	6	0.30	Moderate
Dzakia Afifatunnisa	76	88	12	0.50	Moderate
Fakhriansyah	76	88	12	0.50	Moderate
Fatih Dzakirah	68	92	24	0.75	High
Hafiq Abizar Razky	68	92	24	0.75	High

Student Name	Pre-test	Post-test	Gain	N-Gain	Description
Hiskiyal Akrama	80	96	16	0.80	High
Kaela Aiyulia	80	96	16	0.80	High
Keisyah Nadira Zivani	60	88	28	0.70	High
Khayra Humaira	80	92	12	0.60	Moderate
Muhammad Alif	68	92	24	0.75	High
Muhammad Aqsha Khairan	68	92	24	0.75	High
Muhammad David	80	92	12	0.60	Moderate
Naila Rumaisha	80	96	16	0.80	High
Najla Luthfiyah	76	88	12	0.50	Moderate
Nurul Aulia Saputri Lubis	76	88	12	0.50	Moderate
Nyak Zufirah	76	88	12	0.50	Moderate
Raffa Maulana	68	92	24	0.75	High
Restu Nugraha Permana	68	92	24	0.75	High
Siti Zhafira Najwa	68	92	24	0.75	High
Syakira Adilla	76	88	12	0.50	Moderate
Syarifah Azzahra	76	88	20	0.63	Moderate
T.M. Ahlul Rizki	80	96	16	0.75	High
Teuku Harizal	68	92	24	0.75	High
Thara Balqis Fhoenna	68	92	24	0.75	High
Triana Dika	68	96	28	0.88	High
Viki Munaiya Elfa	68	96	28	0.88	High
Muhammad Dwi Saputra	76	88	12	0.50	Moderate

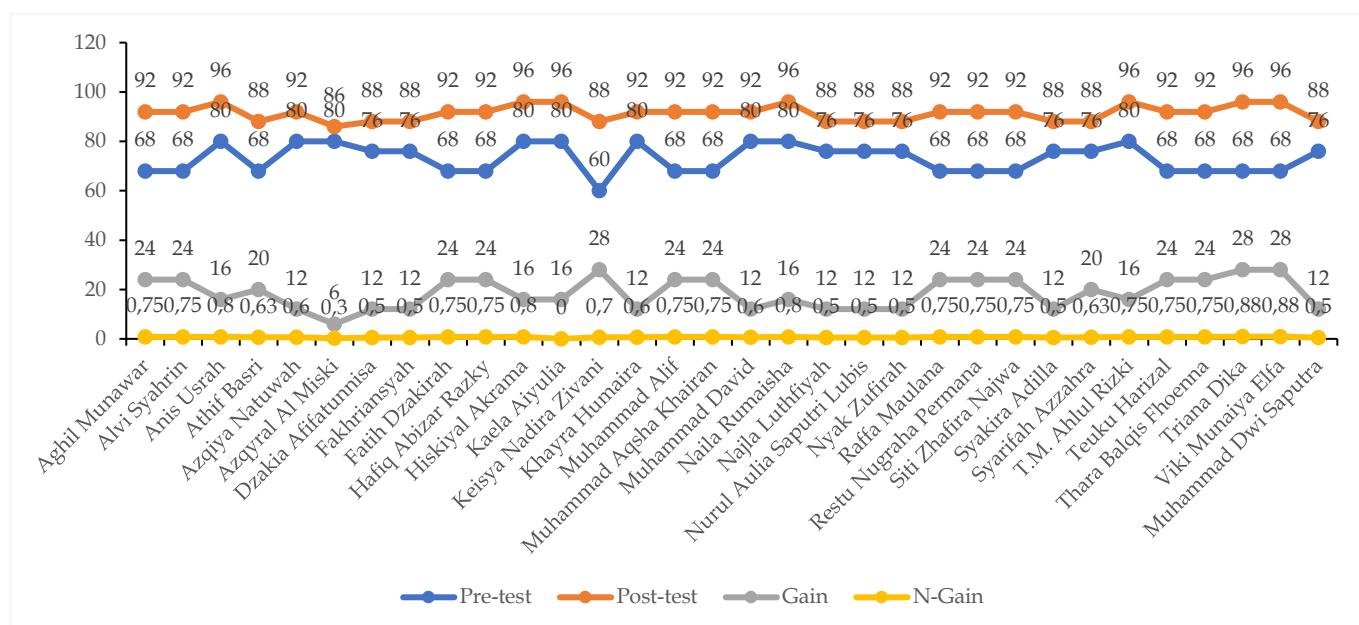


Figure 1. Student learning outcomes

The improvement in students' learning achievement after the guidance of the accompanying teacher demonstrated the effectiveness of the intervention (Fakhtur, 2018; Nazari et al., 2022). The average pre-test score of 60 increased to 88–90 on the post-test, showing an improvement of approximately 46–50%. This indicates that most students were able to understand the topic of growth and development more effectively after receiving additional support.

Analogous to ecological concepts, the variation in student scores (analogous to biodiversity) indicates that students initially had differing levels of ability and

understanding; however, the accompanying teacher's intervention successfully enhanced all students' performance. The increased score consistency (analogous to evenness) reflects a more uniform distribution of post-test results, suggesting that the accompanying teacher helped lower-achieving students reach the class average. Moreover, the dominance of high scores (analogous to dominance) highlights that a greater number of students achieved scores above 85, signifying the effectiveness of the accompanying teacher in facilitating comprehension of key biological concepts (Azzarkasyi et al., 2025; Zhang et al., 2022).

These findings align with previous studies suggesting that mentoring by accompanying teachers can improve students' academic achievement and critical thinking skills (Zuhri et al., 2022). The accompanying teacher serves as a facilitator, motivator, and academic mentor, enabling students to actively engage in learning, overcome learning barriers, and achieve deeper conceptual understanding in biology (Danim, 2011; Dorlan, 2018; Suparlan, 2006).

Conclusion

Based on the findings, it can be concluded that the presence of an accompanying teacher has a significant positive effect on students' learning achievement in the topic of growth and development of living organisms at SMP Negeri 6 Banda Aceh. The average student score increased from 60 on the pre-test to 88–90 on the post-test, with an improvement rate of approximately 46–50%, demonstrating the effectiveness of the teacher's intervention in enhancing students' understanding of biological concepts. In addition to improving scores, the accompanying teacher's presence contributed to: (a) Enhanced critical thinking skills, as students were encouraged to analyze, evaluate, and draw conclusions systematically. (b) Increased participation and learning motivation, as more students actively engaged in questioning, discussion, and classroom activities. (c) Reduced learning achievement gaps, shown by the more even distribution of post-test scores compared to pre-test results. (d) Deeper conceptual understanding, where students not only memorized content but also critically and applicatively understood relationships between concepts of growth and development. This study reinforces the importance of collaborative teaching strategies between the accompanying and main teachers as an effective model to enhance learning quality in junior high schools. The systematic presence of accompanying teachers can serve as a practical intervention to improve student learning outcomes—particularly in subjects requiring conceptual understanding and higher-order thinking skills.

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