

Improving students' learning motivation through differentiate learning in sports education subject Mejorar la motivación de aprendizaje de los estudiantes a través del aprendizaje diferenciado en la asignatura de educación deportiva

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Abstract. The background of this research is to address students' motivation in sports learning which is still low. Based on the results of interviews with the teacher at SMP Negeri 2 Sleman, an average score of 69.33 was obtained as the low category. This condition should be suspected as the cause of the low achievement of student learning outcomes. The aim of the research is to improve students' learning motivation through the implementation of differentiating learning strategies in sports subject. This study also wants to know the impact of improving motivation on increasing students' achievement. This study uses an experimental method, namely quasi-experimental research design by applying differentiation learning strategies to increase student motivation in sports subjects. The results of this study showed that the application of differentiation learning strategies succeeded in increasing student learning motivation in sports subjects, with an intrinsic motivation (IM) value of 84.53 and extrinsic motivation of 77.67 in the very good category, and there was an increase in the average achievement score from 72.02 to 76.39 in the end-of-semester assessment. Based on these results it can be concluded that the differentiated learning model is proven to be able to increase student motivation in learning sports.

Keywords: Differentiated learning, learning motivation, sports achievement

Resumen. El objetivo de esta investigación es abordar la motivación de los estudiantes en el aprendizaje deportivo, que aún es baja. Según los resultados de las entrevistas con el profesor de SMP Negeri 2 Sleman, se obtuvo una puntuación media de 69,33 como categoría baja. Se debe sospechar que esta condición es la causa del bajo logro de los resultados de aprendizaje de los estudiantes. El objetivo de la investigación es mejorar la motivación de aprendizaje de los estudiantes mediante la implementación de estrategias de aprendizaje diferenciadoras en la asignatura deportiva. Este estudio también quiere conocer el impacto de la mejora de la motivación en el aumento del rendimiento de los estudiantes. Este estudio utiliza un método experimental, concretamente un diseño de investigación cuasiexperimental mediante la aplicación de estrategias de aprendizaje diferenciadoras para aumentar la motivación de los estudiantes en las asignaturas deportivas. Los resultados de este estudio mostraron que la aplicación de estrategias de aprendizaje diferenciado logró aumentar la motivación de aprendizaje de los estudiantes en asignaturas deportivas, con un valor de motivación intrínseca (IM) de 84,53 y motivación extrínseca de 77,67 en la categoría muy buena, y hubo un aumento en la puntuación media de logro de 72,02 a 76,39 en la evaluación de fin de semestre. Con base en estos resultados se puede concluir que el modelo de aprendizaje diferenciado ha demostrado ser capaz de aumentar la motivación de los estudiantes en el aprendizaje del deporte.

Palabras clave: Aprendizaje diferenciado, motivación de aprendizaje, logro deportivo

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Introduction

Sports learning in public schools, especially junior high schools, is a physical activity to improve the quality of individual health and make the body feel healthier and fitter as well as refreshing for students (Adji et al., 2022; Amran et al., 2023; Arifin et al., 2024). Sports in schools also provide space for students to excel where many sports organizations, both government and private, hold special competitions for students (Auliana et al., 2024; Pratama et al., 2024; Riyana et al., 2023). Therefore, sports activities play an important role in improving fitness, increasing immunity and performance (Dong et al., 2024). Sports learning is carried out specifically under the direction of the teacher with predetermined goals (Festiawan et al., 2024; Saifu et al., 2021; Salafi et al., 2022). In education, sport in schools is a fundamental part of the entire educational process that can improve students' psychomotor, cognitive, and emotional performance

(Casado-Robles et al., 2020; Choi, Sum, Leung, Ha, et al., 2021; Choi, Sum, Leung, Wallhead, et al., 2021; Salafi et al., 2023). Therefore, sport is a compulsory subject in school. This subject also positively affects the growth, physical development of students from an early age (Hardianto et al., 2022; Shahril et al., 2024; Sonjaya et al., 2024).

Carrying out sports activities properly guided by a good teacher or coach also has an impact on behavior such as sportsmanship, honesty and readiness to accept defeat (Hastuti et al., 2021; Sukendro et al., 2021; Sutapa et al., 2020). Students who are diligent in learning sports well can have superior character than students who do not take part in this lesson (Marini et al., 2021; Oddner, 2010; Yildiz et al., 2021; Sutapa et al., 2021). This shows that sports subjects are important to be implemented in schools. From a theoretical and practical point of view, capable and professional sports teachers must also oversee the implementation of sports learning in schools (Ilham et al., 2021; Sutapa et al., 2024; Trisnadi et

al., 2024). Sports teachers should have good quality and competence to increase student motivation and achievement in learning sports (Eroje et al., 2020; Jufrianis et al., 2021; Kauki et al., 2024). Based on this theory, sports learning, in addition to improving students' physical fitness, also functions as a tool to instill values that build attitudes, such as decency, discipline, honesty, sportsmanship, responsibility, struggle, and a healthy lifestyle. Sports education as a teaching activity in schools is expected to improve a healthy lifestyle, improve physical quality, meet the need for knowledge about sports, and understand and practice it correctly and appropriately (Pepe, 2021; Trisnadi et al., 2023; Utami et al., 2024). This theory is also reinforced by the opinion of Hordvik et al., 2017; and Zhou 2018 who said, "The essence of learning sports is to develop three main areas, namely: psychomotor, affective, and cognitive". Sports education in the national education system is a skills lesson that focuses on how to maintain and improve physical fitness, body movement skills, and sports knowledge during the learning process (Chen, 2022; Utami et al., 2023; Widodo et al., 2024).

Based on these theories sports education in schools aims to improve student fitness, improve physical development, have knowledge of sports, be skilled at sports, excel in sports, have noble character, be honest, be disciplined, be sporty and have a sense of joy in learning sports (Kogoya et al., 2023; Kristiyanto et al., 2020; Yudanto et al., 2024). In order to achieve these goals, teachers who have good abilities like innovation and have multiple teaching strategies are needed (Yudhistira et al., 2021). The teacher must also be able to build good communication with students so that students are not afraid to convey their ideas to the teacher (Yuniana et al., 2023). Good interaction between teachers and students will have an impact on the quality of good teaching and learning (Listyarini et al., 2021; Nasrulloh et al., 2021). Professional teachers can carry out a fun learning process oriented to students and learning objectives can be achieved. The teacher's abilities include the ability to develop lesson plans, implement lesson plans, conduct assessments and follow up on assessment results (Nasrulloh et al., 2020). The sports education assessment includes knowledge assessment, skills assessment and attitude assessment (Nasrulloh et al., 2022).

Professional teacher collaboration and good sports education facilities should produce ideal learning goals (Nopembri et al., 2022; Nugroho et al., 2021). The ideal condition at SMP Negeri 2 Sleman as the basis for the study in this study is the medium-term school program and the strategic plan or annual program. The achievement plan for the first year 2022/2023 for Sports Subjects is 75. This figure is a combination of the results of the knowledge assessment and skills assessment, while the attitude assessment results are at least in the good category (B). The teacher's attitude assessment takes data with an instrument to measure attitudes, namely the Likert scale. Based on the results of the mid-semester

assessment, semester 1 of the 2022/2023 school year, class VIII Sports at SMP Negeri 2 Sleman is still under ideal conditions, there is even a fairly high disparity. The following is a table of midterm assessment results;

Table 1.
Results of the 1st semester midterm assessment for class VIII Semester 1 for the 2022/2023 Academic Year

- Number of test takers	189	Average	65.34
- Completed amount	151	Lowest	27.5
- Unfinished amount	38	Highest	90
- Percentage of participants complete	74.84%	Absorption	63.30 %
- The percentage of participants has not been completed	25.16%	Standard Deviation	11.3%

The data shows that there is a disparity between real conditions and ideal conditions, where student achievement does not reach the minimum target of 75 with details of 151 students passing and 38 students being declared incomplete. The average value only reached 65.34. Learning completeness reached 74.84% while students who had not completed 25.16%. When viewed from the perspective of the percentage of completion, 74.84% is in the good category, but the average score below the set standard is a serious problem because learning is considered a failure.

What are the causes of failure in learning sports in class VIII SMP Negeri 2 Sleman? Researchers try to identify the problem by asking several questions to the teacher. The results of problem identification converge to student learning motivation. Furthermore, researchers conducted interviews with teachers by asking 15 questions related to student learning motivation, the results are as follows:

Table 2.
Data from Class VIII sports teacher interviews

No	Teacher	QUESTIONS															Average	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1	Destiana pujiasri	1	5	4	3	4	4	4	4	3	3	3	3	4	3	4	4	69.33

Data from teacher interviews about student learning motivation got a score of 69.33 in the low category. Based on these data, it should be suspected that low student learning motivation contributed to the failure to achieve the minimum target as set out in the 2022/2023 School Work Plan (RKS). This condition must be addressed by making innovative efforts by trying different learning strategies. Teacher innovation is needed in order to improve performance outcomes. Learning strategies must be adaptive and understand well the interests, talents, environment of students and their abilities. (Seti et al., 2020) explained that sports have an irreplaceable influence on the formation of character, morals, intellectual development, achievement, aesthetics, and healthy lifestyles of students, therefore, the subject of sports education in schools demands the right approach. to convey subject matter so that learning objectives can be achieved optimally, such as

a learning approach that takes into account the potential, interests, talents, environment and readiness of students. The learning model in question is a differentiated learning model. Differentiated learning in sports subjects is to provide learning process services to students based on differences in sports abilities and rooted in the theory of dynamic systems of human movement (Nychkalo et al., 2020). Several studies have revealed that differentiating learning can be widely accepted in the teaching process in the motor field (August, 2021; Melo et al., 2020; Özbal et al., 2019; Raab et al., 2009; Ward & Quennerstedt, 2016). So far, many experts have researched the use of differentiated learning models in sports subjects. These studies are classified under three categories. First, a comparative study between the differentiation approach and the conventional approach in learning (Al-Shaboul et al., 2021; Kamarulzaman et al., 2018; Magableh & Abdullah, 2020; Shareefa & Moosa, 2020; Siedentop et al., 2019; Smale-Jacobse et al., 2019; Yavuz, 2020).

This study focuses more on the effect of the application of differentiation learning models on student learning motivation in sports subjects. In this context, a "practice exam" likely refers to an evaluation or assessment that includes aspects of practice or skill in sports lessons. However, the type of exercise taken or evaluated in this study is not described in detail in the abstract. Therefore, no specific information about specific sports was tested in the study.

However, the main focus of research is how the application of differentiated learning models can increase students' learning motivation in sports subjects and its impact on their academic achievement. The article is more about the context of learning in schools than testing practices in a particular sport. More information about the type of exercise evaluated may be found in the full research report or more detailed sources.

This study shows that differentiating learning can increase learning motivation, students and creative behavior of learners. Second, the differentiation approach as a dynamic learning model in facilitating the development of creativity components, substantially reducing failure, encouraging different adaptations based on expertise, and supporting discipline in behavior (Faber et al., 2018; Ginja & Chen, 2020; Idrus et al., 2021; Ramli & Nurahimah, 2020). Third, a different teaching model is an attempt to encourage self-organization (Cohen et al., 2018; Fred Weaver, 2020; Ivanović & Törteli Telek, 2014).

Based on the results of this study, this research aims to complement the results of previous research by focusing on student learning motivation and is expected to have an impact on student achievement. This research is an observation of the implementation of teaching using a differentiated learning approach. Differentiated learning is a teaching strategy promoted by Tomlinson in the field of education. Sports learning with a different approach is an attempt to adjust the teaching

process in schools to meet the needs and goals of each individual's teaching (Eidson & Eidson, 2003; Tomlinson et al., 2008; Nugroho et al., 2022). These adjustments refer to students' readiness, interests, and profiles to increase high motivation. Therefore, this study seeks to determine the increase in student motivation which has an impact on increasing student achievement in sports subjects, using different teaching and learning approaches. The hypothesis in this study is, Can differentiation learning in sports subjects increase student learning motivation which is higher and have an impact on increasing learning achievement?

Materials and Methods

This research is using experimental method yaitu quasi-experimental research design. The research subjects were students of SMP Negeri 2 Sleman, the location of the school is at Jalan Bhayangkara 15, Morangan, Sleman, Yogyakarta. Respondents were students of SMP Negeri 2 Sleman with a population of 570. The number of research samples was 189 people from class VIII, in the 2022/2023 academic year. Thus, this research involved 189 respondents, of which all students were given differentiation learning actions in sports subjects. Preliminary data to determine student motivation researchers conducted interviews with subject teachers. Student achievement data was taken from the results of the midterm assessment (PTS), Semester I for the 2022/2023 academic year. Data from the assessment results are used to determine the progress of the implementation of the differentiated learning approach.

After identifying the level of motivation of students in the classroom, the next important step is to implement learning differentiation strategies. One effective approach is to recognize students' learning styles and integrate diverse teaching methods into learning. This could mean presenting material in a variety of formats, such as text, images, videos, and practical demonstrations, to meet students' learning preferences. In addition, providing options in assessments, such as project assignments or written exams, allows students to express their understanding according to their strengths and interests.

In addition, more intensive interaction with students and providing constructive feedback are key in increasing motivation. This includes supporting students in setting personal goals, monitoring their progress, and rewarding their achievements. By focusing on students' individual needs and preferences, different learning models can inspire them to actively engage in learning, increase motivation, and achieve better outcomes in the classroom.

A motivational instrument is a tool or method used to measure or assess the level of motivation of a person or group of people towards a particular goal or activity. These instruments vary widely, ranging from motivational questionnaires that require individuals to answer a number of questions

related to what drives them, the goals they have, to the extent to which they feel motivated in a particular task or activity. There is also an instrument in the form of a motivational interview that involves face-to-face interaction with individuals to understand more deeply the factors that influence their motivation. In addition, behavioral observation can also be used to measure motivation, especially in educational contexts where a teacher observes students' active participation in lessons. These motivational instruments help researchers, educators, managers, and professionals in various fields to understand and measure the level of motivation of individuals or groups in various contexts, such as education, career, sports, and daily life.

To answer the first question of this study, the researcher used a survey method to collect data related to the learning motivation of sports students through a differentiated learning approach. After the researcher obtained the questionnaire data, the researcher changed each statement into a score to find the results. Questionnaire values are presented in the table (using a Likert scale):

Table 4. Intrinsic Motivation

No	Intrinsic Motivation	Mean	Rating of Motivational Level
1	I like learning sports through differentiated instruction approach.	4.6	High degree of motivation
2	Learning sports through differentiated instruction approach is a need.	4.3	High degree of motivation
3	I like certain sport. Therefore, differentiated instruction approach is appropriate to use.	4.1	High degree of motivation
4	I can improve my sport understanding through differentiated instruction approach.	4.1	High degree of motivation
5	In the future, I would like to be a professional atlet.	4.1	High degree of motivation
	Total	4.23	High Degree of Motivation

Table 4 indicates that the results of the questionnaire related to learners' intrinsic motivation based on each indicator such as interest, need, hobby, goal, and future career. The total score is 4.23. It proves that the total mean for intrinsic motivation is high in the rating of the motivational level. Furthermore, each statement for intrinsic motivation statement also obtain a high rating level of motivation. The following is the detail explanation of each indicator.

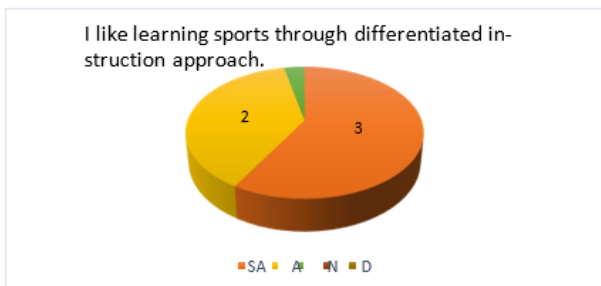


Figure 2 Learners' Intrinsic Motivation: Interest

Figure 2 shows that statement number 1 in the questionnaire, as the indicator of interest in intrinsic motivation, has an average mean score of 4.6, the highest mean score among the other statements in intrinsic motivation. From 60 responses,

Results and Discussion

Table 3. Likert Scale Rating

Optional	Score	
	Intrinsic Motivation	Extrinsic Motivation
Strongly Agree	5	5
Agree	4	4
Neutral	3	3
Disagree	2	2
Strongly Disagree	1	1

The calculation of the average score of a learner following formula standard of mean adopted from Hasmi (2013)

Intrinsic Motivation

Based on the questionnaire, the researcher shows a table that presents five statements items about intrinsic motivation, their means scores, and their corresponding motivation level, which serve as the basis for further interpretation and explanation.

59% of the learners selects strongly agree, 38% of the learners selects agree, and 3% of the learners selects neutral. It proves that the learners have high interest motivation in learning sports through differentiated instruction approach. It means that learners' attention is highly attracted to the sports activity.

Need

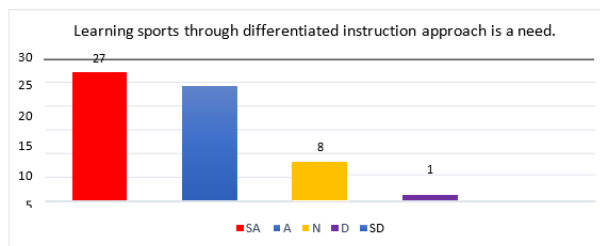


Figure 3 Learners' Intrinsic Motivation: Need

Figure 3 indicates that statement number 2, as the indicator of need in intrinsic motivation, has an average mean of 4.3. From 60 responses, 45% of the learners selects strongly agree, 40% of the learners selects agree, 13% of the learners selects neutral, and 2% of the learners selects disagree. It proves that the learners have high motivation in in learning sports through

differentiated instruction approach since their needs in maintaining health quality to be more concern. Besides, they can select their prefer sport based on their need.

Hobby

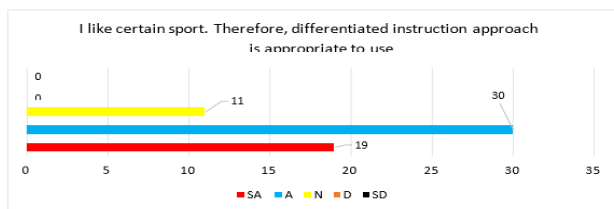


Figure 4 Learners' Intrinsic Motivation: Hobby

Furthermore, statement number 3 in the questionnaire, as the indicator of hobby in intrinsic motivation, has an average mean score of 4.1, the first lowest mean score among the other statements in intrinsic motivation. From 60 responses, 32% of the learners selects strongly agree, 50% agree, and 18% selects neutral. It proves that learners have high motivation in learning-teaching sport through the use of differentiated instruction approach. The learners' feel and relaxation in certain sports since it based on their hobby. The key to be success in doing certain sport is based on hobby.

Goal

Learners' responses in the statement number 4 as the indicator of goal in intrinsic motivation, have an average mean of 4.1, the second lowest mean score among the other statements in intrinsic motivation but it is still classified as a high level of motivation. From 60 responses, 28% of the learners selects strongly agree, 49% agree, and 23% selects neutral. It

shows that learners have high motivation in achieving their goal through the use of differentiated learning-teaching approach in sports lesson.

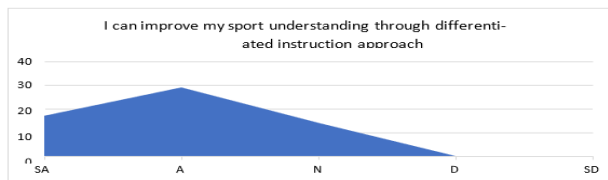


Figure 5 Learners' Intrinsic Motivation: Goal

Future Career

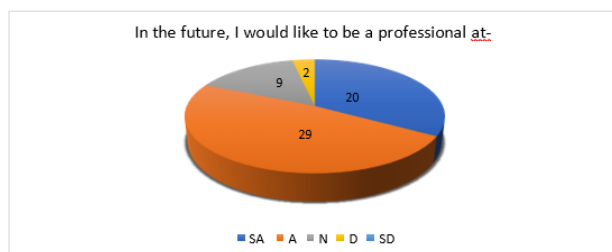


Figure 6 Learners' Intrinsic Motivation: Future Career

Learners' responses in the statement number 5 as the indicator of future career in intrinsic motivation, have an average mean of 4.1, the third lowest mean score among the other statements in intrinsic motivation but it is still classified as a high level of motivation. From 60 responses, 34% of the learners selects strongly agree, 48% agree, and 15% selects neutral, and 3% learners select disagree. It shows that learners have high motivation in preparing their future career to be a professional atlet through differentiated learning-teaching approach eventhough there are 2 learners who disagree.

Extrinsic Motivation

Table 5. Extrinsic Motivation

No	Extrinsic Motivation	Mean	Rating of Motivational Level
1	Teacher's instruction and creativity in using differentiated learning-teaching approach in sport lesson is interesting.	4.3	High degree of motivation
2	The media used by teacher in teaching sport using differentiated learning-teaching approach is motivating.	4.2	High degree of motivation
3	Parents' encourage me to learn sport in-depth via differentiated learning-teaching approach	3.8	High degree of motivation
4	School atmosphere affect my motivation in learning sport through differentiated learning-teaching approach.	3.8	High degree of motivation
5	The availability of sport facilities at school support the utilization of differentiated learning-teaching approach.	3.4	Moderate degree of motivation
Total		3,90	High Degree of Motivation

Table 5 shows the result of the questionnaire related to learners' extrinsic motivation based on each indicator such as teacher, media, parents, and environment. The data from the

table shows that the total mean for extrinsic motivation is high in the rating of the motivational level.

Student achievement results

The results of the end of semester assessment (PAS) of semester 1 of the 2022/2023 school year for class VIII show the following results:

Table 8.
Final Semester Assessment Results, Semester 1 for class VIII Sport subjects Academic Year 2022/2023

Number of test takers	189	Average	75.30
Completed amount	94	Lowest	32.50
Unfinished amount	95	Highest	95.00
Percentage of participants completed	49.5	Absorption	74.0%
The percentage of participants has not been completed	50.5	Standard Deviation	11.62%

Comparison of learning outcomes before being given a differentiated learning model with after obtaining a differentiated learning model refers to the comparison between student learning outcomes before and after applying an adjusted or differentiated learning model. Before applying the differentiated learning model, you will retrieve the pretest result data, reflecting the student's initial understanding of the learning material. This is the starting point to assess the extent to which students understand the subject before getting help or adjustment. After that, a differentiated learning model is applied. This can be a variety of strategies such as individual teaching, the use of different teaching

materials, or evaluation methods tailored to the needs of students. After the relevant learning period, you will retrieve posttest result data to assess student understanding after benefiting from the differentiated learning model. A comparison between pretest and posttest results will show the extent to which changes in understanding occur. If the posttest results show a significant improvement compared to the pretest results, this indicates that the differentiated learning model is effective in improving student understanding. It assists teachers and instructors in measuring the positive impact of the learning adjustments they have implemented to support individual student development. Thus, this comparison is an important tool in measuring the success of differentiated learning models

Discussion

Based on the results of the motivation questionnaire, the results were obtained 3.90. Moreover, three of four extrinsic motivation statements had a high rating level. The table presents four statements items about extrinsic motivation, their means scores, and their corresponding motivation levels, which serve as the basis for further interpretation and explanation. These results prove that differentiation learning can increase high learning motivation for students, both intrinsic and extrinsic. These results are good news for the world of education because there are new methods of effective learning that can increase student motivation. Motivation is very important in teaching and learning activities because with high

learning motivation the learning conditions will be lively and fun so that it stimulates students to master the material optimally.

The impact of motivation on student achievement.

Based on the results of the end of semester assessment, class VIII semester 1 of the 2022/2023 Academic Year showed a result of 75.30, the result exceeded the minimum target set in the first year's School Work Plan, namely 75. This fact proves that increasing student learning motivation has a positive impact on improving learning achievement. At the beginning of the study, the average acquisition result for class VIII was 65.34, an increase of 9.96. The appearance of data on the increase in student achievement can be seen from the following progress chart of increasing student achievement:

Previous research that had similar goals. One previous study might have found that the use of explicit rewards in teaching can increase student motivation (Smith et al., 2018; Pratama et al., 2022). You can compare your results with this study by noting whether your differentiated learning model also showed increased motivation, and whether this approach was more effective or comparable to the explicit reward approach. The relevance of the results will depend on the extent to which your findings support or extend previous research. If your research shows that differentiated learning models have a significant impact on student motivation and may be more effective than explicit reward approaches, these can have high relevance in teaching and learning contexts. This can provide valuable information to educators on how to increase student motivation in their classrooms. However, keep in mind that the relevance of research results can vary greatly depending on the topic, context, and purpose of your research. Therefore, it is important to refer to the research that is most relevant to the problem you are researching and then compare your results with that research to determine its relevance.

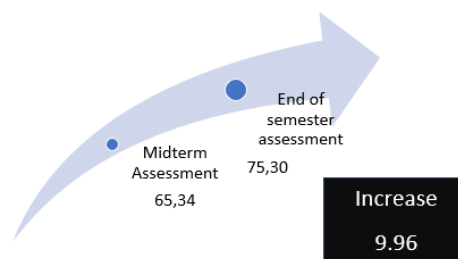


Figure 7. The progress of the results of the implementation of grade 8 differentiation learning methods

Graph 7 shows the results of student learning achievement moving up from 65.34 to 75.30. These results prove that differentiating learning is able to increase student learning motivation and have an impact on increasing student achievement.

Conclusion

The application of differentiated learning models can effectively increase student motivation in the classroom. The results showed that by accommodating individual differences in students' learning styles, skill levels, and interests, differentiated learning models help create a more inclusive and motivating learning environment. This reflects the importance of a pedagogical approach that is responsive to students' needs and encourages their growth. In addition, the findings have significant implications in informing classroom instructional practices, highlighting the importance of teachers as facilitators who can design relevant and engaging learning experiences for each student. Differentiated learning models contribute not only to the improvement of academic achievement, but also to the development of students' intrinsic motivation, which is a key factor in continuous learning and deep understanding. Thus, the results of this study provide a strong foundation to encourage the application of differentiated learning models in educational contexts to support student growth and motivation holistically.

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