

APPLICATION OF SUPER ITEM LEARNING MODEL IN IMPROVING LEARNING OUTCOMES OF PHOTOSYNTHESIS CONCEPT IN CLASS VIII OF SMP AL-WATHAN AMBON

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Abstract. The super item learning model is one of the learning models that is oriented towards understanding and activeness of students in problem solving. This type of research is descriptive with the aim of determining whether the application of the Super ITEM model in improving the learning outcomes of the concept of photosynthesis in class VIII₂ of SMP AL-Wathan Ambon. The sample in this study was 29 people. The instruments used are tests, affective observation sheets, and psychomotor observation sheets. The data analysis used is descriptive data analysis of student learning outcomes, affective observation results, and student psychomotor. The results of data analysis obtained the learning process using a super item learning model students are more active in the learning process when compared to the learning process that is carried out conventionally. These results can be seen from the classical average score obtained, namely in the initial test implementation, the average score obtained was 47.37 and increased in the implementation of the final test, whose average score obtained was 75.40. Based on the results of learning completion using a super item learning model, students who achieved a minimum completion standard of 23 people or with a percentage of 79.31%.

Keywords: Super Item Learning Model, Learning Outcomes, Photosynthesis

Abstrak. Model pembelajaran super item merupakan salah satu model pembelajaran yang berorientasi pada pemahaman dan keaktifan siswa dalam pemecahan masalah. Jenis penelitian ini adalah deskriptif dengan tujuan untuk mengetahui apakah penerapan model Super ITEM dalam meningkatkan hasil belajar konsep fotosintesis di kelas VIII₂ SMP AL-Wathan Ambon. Sampel dalam penelitian ini berjumlah 29 orang. Instrumen yang digunakan yaitu tes, lembar pengamatan afektif, dan lembar pengamatan psikomotorik. Analisis data yang digunakan yaitu analisis data deskriptif terhadap hasil belajar siswa, hasil pengamatan afektif, dan psikomotorik siswa. Hasil analisis data diperoleh proses pembelajaran dengan menggunakan model pembelajaran super item siswa lebih aktif dalam proses pembelajaran jika dibandingkan proses pembelajaran yang dilaksanakan secara konvensional. Hasil tersebut dapat dilihat dari nilai rata-rata secara klasikal yang diperoleh yakni pada pelaksanaan tes awal nilai rata-rata yang diperoleh yakni sebesar 47,37 dan meningkat pada pelaksanaan tes akhir yang nilai rata-rata yang diperoleh yaitu 75,40. Berdasarkan hasil ketuntasan belajar dengan menggunakan model pembelajaran super item siswa yang mencapai standar ketuntasan minimal yakni sebesar 23 orang atau dengan persentase 79,31%.

Kata Kunci: Model Pembelajaran Super Item, Hasil Belajar, Fotosintesis

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INTRODUCTION

Education is one of the means of solving social problems in society. Education has an important role in improving the quality of human resources in order to have high competitiveness and be able to overcome social problems in society (Aripin, 2018; Syahmina et al., 2020). The importance of the role of education requires that infrastructure and the quality of education continue to be improved in a better direction. Education is the process by which a person develops attitude abilities and other forms of behavior in the society in which he lives (Pratiwi, Sukestiyarno & Asikin, 2014).

Education is basically the interaction between education and students, to achieve educational goals, which takes place in a certain environment. As a component of education, the purpose of education occupies an important position among other components. It can be said that all components of all educational activities are carried out solely directed to or aimed at the achievement of these goals (Yulian & Wahyudin, 2019). Thus, activities that are irrelevant to the purpose are considered deviant, non-functional, even false, so they must be prevented from happening. Here it can be seen that the purpose of education is normative, that is, it contains elements of norms that are coercive, but do not conflict with the nature of student development and can be accepted by society as a good life value (Chania et al., 2017; Divayana et al., 2019).

Education on a micro scale is synonymous with learning and teaching activities in the classroom. Teaching and learning activities contain three elements that can be distinguished, namely teaching objectives, learning experiences, and learning outcomes (Saputri & Kamsurya, 2020). The three elements are interconnected and affect each other. Changes that occur in one of these elements can affect other elements, so to improve the quality of education changes must be considered in these three elements. The achievement of the three elements in learning activities can be known by conducting an evaluation. Evaluation is carried out to find out the extent to which educational goals have been achieved, the learning experiences obtained by students, and student learning outcomes (Kamsurya, 2020). With the necessity to improve the quality of education, evaluation as part of education always undergoes improvements in its planning.

Biology as one of the very important and very basic sciences should be able to be taught to students well (Hariyanti et al., 2020). In biology learning, teachers should be able to convey material directly introducing the world around, so that what is explained can be accepted by students, not just memorizing the material, but also students can implement the material in daily activities (Astuti et al., 2019; Lestari & Irawati, 2020). Therefore, biology learning that

takes place in the classroom must be able to be oriented towards students and student activity, so that the material studied can be fully understood by students.

The problem faced by students at Al-Wathan Ambon Junior High School is that the results of learning biology have not been completed, namely that they have not reached the minimum number of absorption levels that have been determined. One of the factors in learning biology is that teachers talk more, so students get bored quickly and cause low biology learning achievement. Teachers have not lived up to the nature of biology because learning in schools only emphasizes products (Syahmina et al., 2020). This is coupled with the opinion of students that biology learning is considered difficult so that it does not attract students' interest in learning which has an impact on the low achievement obtained by students from formative tests and summative tests. This is caused by students who lack understanding of concepts in biology learning.

Based on the description above, it arouses the curiosity of researchers to know how the super item learning model if applied to biology lessons. The super item learning model is one of the learning models that is oriented towards understanding and activeness of students in the learning process (Ikawati et al., 2019; Yanti et al., 2016). This learning is by giving assignments to students in stages from simple to complex (Permatasari, 2014), in the form of problem solving so as to allow students to use their understanding of the concepts they have to solve various problems they face in the learning process (Hulukati et al., 2018; Maftuh & Hidayat, 2018). This study aims to determine the application of the super item learning model in improving the learning outcomes of the concept of photosynthesis in class VIII₂ of Al-Wathan Ambon Junior High School.

METHOD

The type of research used in this study is descriptive with the aim of applying the Super ITEM model in improving the learning outcomes of the concept of photosynthesis in class VIII₂ of SMP AL-Wathan Ambon. The population in this study was all class VIII students of Al-Wathan Ambon Junior High School which amounted to 181 people and consisted of class VIII₁, namely 29 people, VIII₂ which was 31 people, VIII₃ which was 30 people, VIII₄ which was 30 people, and VIII₅ which was 31 people. Sampling techniques are carried out randomly (Sugiyono, 2013; Sumargo, 2020), and obtained class VIII₂ which became the sample in this study.

The instruments used in the research are tests, observations, and documentation (Arikunto, 2012). The test used in this study is in the form of student learning outcomes obtained in the implementation of the test in class VIII₂ of Al-Wathan Junior High School, Ambon. The test consists of an initial test and a final test that is carried out at the beginning and end of the learning activity. Observation is used to observe learning activities that take place between teachers and students in the learning process in the classroom which is carried out using a super item learning model (Sukmadinata, 2012). The observation process is carried out on various student activities in the learning process using a super item learning model. The observation process is carried out by a peer. This observation process is carried out with the aim of collecting research data related to affective and psychomotor aspects of students while participating in learning activities using the Super ITEM learning model. Documentation is the taking of images carried out by researchers in conducting research on respondents and used as research evidence.

The data obtained in the research process is then analyzed descriptively. Descriptive analysis is used to determine student learning outcomes on cognitive, affective, and psychomotor aspects by relying on the Benchmark Reference Assessment guidelines with an individual learning completion standard of 65 and a classical student learning completion of 75%. The learning outcomes obtained by students are then analyzed using the following formula.

$$\text{Average affective} = \frac{\text{affective of meeting 1} + \text{affective of meeting 2}}{2}$$

$$\text{Psychomotor Average} = \frac{\text{Psychomotor of meeting 1} + \text{Psychomotor of meeting 2}}{2}$$

$$\text{Achievement Score} = \frac{\text{The number of scores achieved}}{\text{Total score count}} \times 100 \text{ (Purwanto, 2012)}$$

RESULTS

Initial Test Results

Before the researchers carry out the learning process using a super item learning model, an initial test is first carried out to determine the initial ability of students to photosynthesis material taught using conventional learning methods by the teacher. The results of such tests will be the basis for the researcher's consideration in applying the super item model in the classroom. The final test process was carried out on all class VIII₂ students of Al-Wathan

Ambon Junior High School, totaling 29 students. The test results of students after following the initial test implementation process can be seen in the following table.

Table 1. Student initial test results

Value Interval	Frequency	Percentage	Letter Value	Predicate
80 – 100	0	0,00%	A	Very Good
66 – 79	4	13,79%	B	Good
56 – 65	3	10,34%	C	Enough
40 - 55	16	55,17%	D	Less
0 – 39	6	20,69%	E	Fail
Sum	29	100%		

Based on the preliminary test result data in table 1 above, it can be seen that the level of students' understanding of photosynthetic material is very low. This is based on the initial test results achieved by class VIII2 students of Al-Wathan Ambon Junior High School. Of the total number of class VIII2 who took the initial test, none of the students who obtained the test results in the predicate were good, the number of students who obtained the test results in the good category amounted to 4 people or with a percentage of 13.79%, the number of students who obtained the test results in the sufficient category amounted to 3 people or with a percentage of 10.34%, the number of students who obtained test results in the less category amounted to 16 people or with a percentage of 55.17%, and students who obtained test results in the failed category were 6 people or with a percentage of 20.69%.

The results of the initial test above, if reviewed based on the Minimum Completion Criteria in biology subjects at Al-Wathan Ambon Junior High School, which is 65, then from the initial test results above, there are only 4 students who reached the minimum completion criteria or with a percentage of 13.79%, while students who did not complete or did not reach the minimum completion criteria were 25 people or with a percentage of 86.21%. The results of the test show that the learning process carried out using conventional learning methods is not very effective in increasing students' understanding of the material studied, especially in photosynthesis material. The results of the test above can be used as a basis for consideration by researchers in carrying out learning using learning methods that are more oriented towards students' understanding and knowledge in the learning process, especially in studying photosynthesis material with the aim of achieving a success rate in the learning process.

Based on the results of the exploration obtained, the researcher conducted an analysis and reflection on the results of the initial test. To improve the quality of student learning activities, especially in photosynthesis material in class VIII2 of Al-Wathan Ambon Junior High School, researchers tried to conduct a study using a super item learning model on photosynthesis

material in class VIII₂ of Al-Wathan Ambon Junior High School to be able to improve their learning outcomes.

Final Test Results

The process of implementing actions, namely by applying a super item learning model, begins with introducing researchers by the teacher in the classroom as well as telling students that in this class research will be carried out and will be observed by observers during the learning process. Then continued with an apperception of concepts related to photosynthesis and providing motivation to students so that in the next learning students become understanding. After giving an explanation, in this activity the research directly starts learning with the concept of photosynthesis through a super item learning model which is then carried out post-test or the implementation of the final test to determine the success of student learning in the learning process using the super item learning model. In general, learning outcomes in the implementation of the final test after participating in learning activities using a super item learning model can be seen in table 2 below.

Table 2. Final student test results

Value Interval	Frequency	Percentage	Letter Value	Predicate
80 – 100	12	41,38%	A	Very Good
66 – 79	11	37,93%	B	Good
56 – 65	4	13,79%	C	Enough
40 - 55	2	6,90%	D	Less
0 – 39	0	0,00%	E	Fail
Sum	29	100%		

Based on the data of the final test results in table 2 above, where the test process is carried out after students take part in learning activities using a super item learning model, it can be seen that the level of student understanding of photosynthesis material is very high when compared to the test results achieved by students in the implementation of the initial test. This is based on the final test results achieved by class VIII₂ students of Al-Wathan Ambon Junior High School. Of the total number of class VIII₂ who took part in the final test, the number of students who obtained test results in the excellent category amounted to 12 people or with a percentage of 41.38%, the number of students who obtained test results in the good category amounted to 11 people or with a percentage of 37.93%, the number of students who obtained test results in the sufficient category amounted to 4 people or with a percentage of 13.79%, the number of students who obtained test results in the category was less than 2 people or with a percentage of 6.90%, and there were no students who obtained test results in the failed category.

The final test results above, if reviewed based on the minimum completion criteria in biology subjects at Al-Wathan Ambon Junior High School, which is 65, then from the final test results above obtained excellent results when compared to the results of the initial test implementation. Because of the total number of students 29 people who took the final test, the students who obtained the ≥ 65 test results were 23 people or with a percentage of 79.31%, while the students who obtained the < 65 test results only amounted to 6 people or with a percentage of learning completion of 20.69%.

Based on the results of the final test, it is clear that the learning process carried out using the super item learning model obtained much better results when compared to student learning outcomes achieved by students in the implementation of the initial test which is safe for the learning process to be carried out using conventional learning methods. The results can be seen from the total percentage of student completion in the implementation of the test, namely in the initial test, the number of students who obtained results reached the minimum completion criteria, namely only 4 students or with a percentage of 13.79% while in the implementation of the final test, the learning process was carried out using a super item learning model, the number of students who obtained the test results reached the minimum completion criteria of 23 people or with a percentage of 79.31%.

The results mentioned above, of course, provide a clear picture that the learning process that takes place using the super item learning model obtains more results when compared to the learning process that takes place with the conventional learning model used by teachers at the school. This is because the learning process takes place using a super item learning model, students are more directly involved in the learning process and students actively participate in each learning activity. In addition, what is very prominent in learning by using the super learning model of question items given to students is multilevel, namely from easy questions to difficult questions. This is intended so that students in solving questions in the learning process do not immediately consider that biology is a difficult subject to learn and students will also get used to solving questions because they always feel challenged and always try to solve the questions given by the teacher.

This is what causes students to be very motivated and very excited in following the learning process carried out by researchers using a super item learning model because students feel that they understand that photosynthetic material is delivered or taught using the learning model.

Results of Affective Assessment of Students in Learning

The assessment process on the affective aspects of students is carried out with the aim of the extent of student attitudes in the learning process carried out using a super item learning model. The process of affective assessment of students is based on several aspects, namely the interest and seriousness of students in working together in their group, being responsible for carrying out their respective duties in the group, politeness in answering questions asked by teachers and friends, and maintaining class order during the learning process. The results of the assessment on the affective aspects of students in the learning process using a super item learning model are as follows.

Table 3. Results of affective assessment of students

Value Interval	Frequency	Percentage	Letter Value	Predicate
80 – 100	16	55,17%	A	Very Good
66 – 79	11	37,93%	B	Good
56 – 65	2	6,90%	C	Enough
40 - 55	0	0,00%	D	Less
0 – 39	0	0,00%	E	Fail
Sum	29	100%		

Based on the data from the affective assessment results in table 3 above, where the assessment is based on student attitudes and activities in the learning process using the super item learning model, it is known that the average student attitude in learning photosynthetic material using the super item learning model is very good and excited. This is based on the results of the affective assessment of students, namely from the total number of students in class VIII2 who were assessed the number of students who obtained affective assessment results in the excellent category, namely 16 people or with a percentage of 55.17%, the number of students who obtained affective assessment results in the category either amounted to 11 people or with a percentage of 37.93%, the number of students who obtained affective assessment results in the category was sufficient amounted to 2 people or with a percentage of 6.90%, and none of the students obtained affective assessment results in the less and failed categories.

The results of the assessment above show that students' attitudes in the learning process using the super item learning model are very good and motivate the rest and make students responsible for the tasks given by teachers and group friends and students in the learning process reflect a good attitude in answering and asking questions to students and teachers.

Results of Psychomotor Assessment of Students in Learning

The assessment process on the psychomotor aspects of students is carried out with the aim of the extent of the student's ability to apply each science that is theoretically understood by students in real life directly. The student psychomotor assessment process is based on several aspects, namely the student's ability to determine the plants that can carry out the photosynthesis process, the accuracy of students in carrying out the photosynthesis process trial, the student's ability to answer or complete the practice questions given by the teacher. The results of the assessment on the psychomotor aspects of students in the learning process using a super item learning model are as follows.

Table 4. The results of the psychomotor assessment of students

Value Interval	Frequency	Percentage	Letter Value	Predicate
80 – 100	18	62,07%	A	Very Good
66 – 79	11	37,93%	B	Good
56 – 65	0	0,00%	C	Enough
40 - 55	0	0,00%	D	Less
0 – 39	0	0,00%	E	Fail
Sum	29	100%		

Based on the data from the assessment of psychomotor aspects in table 4 above, where the assessment is based on the application of students' knowledge and understanding of photosynthetic material, it is known that the average student's ability to apply their understanding obtained good results. This is based on the results of the assessment of student psychomotor aspects, namely from the total number of students in class VIII2 who were assessed the number of students who obtained affective assessment results in the excellent category, namely 18 people or with a percentage of 62.07%, the number of students who obtained affective assessment results in the category either amounted to 11 people or with a percentage of 37.93%, and there were no students who obtained affective assessment results in the sufficient category, neither less nor fail.

The above results show that students' understanding of photosynthesis material taught using the super item learning model obtains maximum results. Because students are able to apply various knowledge about photosynthesis material directly in the form of demonstrations and solving practice questions given by the teacher during the learning process.

Average Student Achievement Score

To find out the improvement of student learning outcomes obtained in the learning process using a super item learning model, it can be seen from the average score obtained in the

implementation of the initial test and the final test conducted on all grade VIII2 students of Al-Wathan Ambon Junior High School which totaled 29 people. The average values are as follows.

Table 5. Student grade point average

Student Learning Outcomes	Initial Test	Final Test
Average value (\bar{x})	47,37	75,40

The table above shows that learning carried out using the super item learning model obtains more results when compared to student learning outcomes carried out by teachers using conventional learning models. This can be seen from the average score obtained by students classically, namely in the implementation of the initial test whose learning process using conventional methods obtained a lower average score when compared to the final test score whose learning process uses a conventional learning model, namely obtaining an average score of 75.40. If viewed in terms of completeness in the learning process by referring to the minimum completion criteria of 65, then in learning using conventional learning methods students obtain a minimum completion or achieve a minimum completion criterion of 4 people or with a percentage of 17.79%. Meanwhile, the learning process using a super item learning model for students who reached the minimum completeness standard was 23 people or with a percentage of 79.31%.

DISCUSSION

Learning is a very important thing in the educational process, because with learning a student can learn and develop the abilities he has to solve various problems that occur around him (Lestari & Irawati, 2020). Learning biology, students must be placed not as objects in learning, but rather must be as subjects in learning (Jariyah & Tyastirin, 2020). Because in learning biology emphasizes the activeness of students to be directly involved in understanding the material taught (Surata et al., 2020).

To realize student activity, the selection of the right learning method and model by the teacher in learning is a very important factor, because the existence of learning methods and learning models will stimulate students to play a more active role in the learning process (Ariawan & Divayana, 2020; Wahyuni & Prihatiningtyas, 2019). One of the learning models that can be used by teachers in biology learning is the super item learning model. The super item learning model is a learning that places students as learning subjects, because in learning all students are divided into groups and all students are given tasks and responsibilities to be

completed and discussed with their peers in their group (Divayana et al., 2021; Yanti et al., 2016). In addition, in the super learning model, the form of questions or problems given by the teacher is given according to the level of student ability and understanding, namely the questions given start from the easy to the form of difficult questions. (Hulukati et al., 2018; Yanti et al., 2016). This is intended so that students can gradually learn biological material, especially photosynthesis.

The learning process with a super item learning model in this learning, students look so active and very motivated to participate in learning activities (Firmasari et al., 2013). Students seem so enthusiastic to participate in learning activities and feel responsible, because in their learning each student is directly involved in learning and each student is given the responsibility to complete their respective tasks. Based on the research results obtained from the student's test results, it can be seen that in the implementation of the initial test, the test results obtained in the test process are classified as very low. These results are evidenced by the test results achieved, namely from a total of 29 students who took the initial test, the number of students who obtained test results in the category either amounted to 4 people or with a percentage of 13.79%, the number of students who obtained test results in the sufficient category amounted to 3 people or with a percentage of 10.34%, the number of students who obtained test results in the less category amounted to 16 people or with a percentage of 55.17%, and students who obtained test results in the failed category were 6 people or with a percentage of 20.69%.

Different things happen to the learning process that is carried out using a super item learning model. Apart from the activeness of students in the learning process, in terms of test results, they also obtained excellent results. This is from the results of the final test implementation, namely from 29 students who took the final test, students who obtained test results in the excellent category, namely 12 people or with a percentage of 41.38%, the number of students who obtained test results in the good category amounted to 11 people or with a percentage of 37.93%, the number of students who obtained test results in the category was enough amounted to 4 people or with a percentage of 13.79%, the number of students who obtained test results in the category was less than 2 people or with a percentage of 6.90%, and there were no students who obtained test results in the failed category.

These results show that the learning process using the super item learning model obtained better test results (Puspita, 2019). In addition, in terms of student learning completion, the implementation of the initial test in learning using the student's super item learning model is more complete than learning using the super item learning model. In the implementation of the initial test, the number of completed students was 4 students or with a percentage of 13.79%.

Meanwhile, in the implementation of the final test where the learning process has been carried out using a super item learning model, there was an increase in the aspect of learning completion, namely students who completed 23 people with a percentage of 79.31%. This is because the learning process using the super item learning model students are more active in the learning process. Another result can be seen from the classical average score obtained, namely in the initial test implementation, the average score obtained was 47.37 and increased in the average final test obtained by 75.40.

The learning process carried out using a super item learning model is able to improve affective and psychomotor outcomes of students (Yulian & Wahyudin, 2019). This is because the learning process carried out using a super item learning model is able to place students as learning subjects instead of learning objects, meaning that the learning process that takes place is able to stimulate students in learning independently and is able to make students play a more active role and the teacher only acts as a facilitator in the learning process. By using a super item learning model, students are able to increase their activities in learning, especially in answering questions submitted by researchers directly which are multilevel in nature starting from things that are easy in nature to the form of questions that are difficult in nature (Wahyuni & Prihatiningtyas, 2019).

The results of the affective assessment using the super item learning model show that the results obtained are very good. This can be seen from the average score obtained at meeting one and meeting two. The average score obtained is 79.53 with each student's score being in the category of good and excellent. These values show that the learning process is able to make students learn well, especially the interest, seriousness, and motivation of student learning in learning photosynthetic material. Thus it is clear that the learning outcomes achieved are learning outcomes in the affective realm. Because affective learning outcomes are related to characteristics, interest in learning, attention, and motivation to learn (Astuti et al., 2019).

As is the case with the affective aspect, the results of the psychomotor assessment of students also obtain good results. The average score of psychomotor assessment in the learning process using the super item learning model is 81.47. Students' ability to determine which plants can carry out photosynthesis is very good, as well as in demonstrating the process of photosynthesis carried out by green plants. Based on this attitude, it is clear that psychomotor learning outcomes are achieved by students well because they are able to actualize their understanding of the material in the form of concrete actions (Ikawati et al., 2019)

CONCLUSION

Based on the results of the research above, there are several things that can be concluded that the learning process using the super item learning model students are more active in the learning process when compared to the learning process that is carried out conventionally. These results can be seen from the classical average score obtained, namely in the initial test implementation, the average score obtained was 47.37 and increased in the implementation of the final test, whose average score obtained was 75.40. Based on the results of student learning completion achieved in the learning process using a super item learning model, namely students who achieved the minimum completion criteria in the implementation of the initial test, namely 4 people or with a percentage of 17.79%. Meanwhile, the learning process using a super item learning model for students who reached the minimum completeness standard was 23 people or with a percentage of 79.31%.

RECOMMENDATIONS

Based on the conclusions above, the researcher conveyed several suggestions, namely (1) considering that learning using a super item learning model can improve student learning outcomes, it is hoped that teachers will be able to apply similar learning methods, and (2) this research is still limited to photosynthesis material so that it is hoped that other researchers can carry out in a wider research contest.

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