Development of Student Worksheets Based of Problem Based Learning to Improve Learning Outcomes on the Importance of Healthy Food for the Body in Class V Students in Elementary Schools

Siti Setiawati Indari[1], M. Sulthon Masyhud[2*], Ucu Rahayu[1]

[1] Open University

[2] University of Jember

***Corresponding Author**

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ABSTRACT

The aim of this research is to describe the effectiveness, validity and practicality of student worksheets based on problem based learning to improve the learning outcomes of fifth grade elementary school students on the importance of healthy food for the body. The design used in this research is Research & Development (R & D). In this research, data collection instruments were used, learning outcomes tests, observation sheets, interviews, questionnaires, and documentation guides. Before the data collection instrument is used, expert validation and empirical validity tests or question item validation tests are carried out. The results of these three types of tests show that all instruments meet the requirements to be used as research data collection instruments. After the data was collected completely, data analysis was carried out using t-test data analysis techniques, relative effectiveness analysis, and practicality testing. Based on the research results, it can be concluded that the student worksheet based on problem based learning is proven to have high effectiveness, validity and practicality in achieving the goals of fifth grade elementary school students regarding the importance of healthy food for the body. Therefore, it is hoped that teachers will use student work sheets based on problem based learning in learning at school.

Keywords: Student worksheets, Problem Based Learning, learning outcomes

INTRODUCTION

The issue of the quality of learning outcomes is a very important discussion. Based on the results of observations at Elementary Scool Mentaos for the 2022/2023 academic year, learning that occurs in class V shows that student learning outcomes are very low. The data obtained shows that in Theme 3 Subtheme 2 in the material The Importance of Healthy Food for the Body, there are 19 students who have not achieved the minimum completeness of learning results. Based on the results of interviews with educators, it is thought that the low learning outcomes are because students are less active and responsible in participating in the learning process. This causes student motivation to decrease, as a result the learning process feels less interesting and makes students less challenged to learn, ask questions, express ideas and take full responsibility in solving a problem through experience and finding the answers to these problems themselves in everyday life.

The student worksheets that students have have several shortcomings, including in terms of language, graphic design, and learning strategies/models. The language aspect is still not understood by students because it is symbolic without relating to problems in everyday life. From the graphic design, there are no combined colors in the Student Worksheets (LKPD) so it doesn't attract students' interest in studying them. In terms of learning

models, the Student Worksheets used do not show systematic work steps. And most teachers only use student worksheets that are provided in textbooks as student activity material during learning activities. The practice questions presented in the Student Worksheet are more precisely evaluation questions to measure students' cognitive abilities only.

Based on the background above, the aim of this research is to find out how the process of developing student worksheets based on Problem Based Learning in learning theme 3 sub theme 2 the importance of healthy food for the body is valid, effective and practical to improve the learning outcomes of fifth grade elementary school students. and to determine the validity, effectiveness and practicality of Problem Based Learning Worksheets in Learning Theme 3 Sub Theme 2 The Importance of Healthy Food for the Body for Class V Elementary School Students.

National education objectives based on Law no. 20 of 2003 concerning the National Education System clearly states that the aim of national education is to develop abilities and shape the character and civilization of a dignified nation in order to educate the life of the nation, aiming to develop the potential of students to become human beings who believe and are devoted to God Almighty, with noble character. , healthy, knowledgeable, capable, creative, independent and become democratic and responsible citizens.

In connection with this goal, to find out the progress of the results achieved by students in learning, it is necessary to carry out an evaluation of learning outcomes according to Nawawi (in Susanto, 2013) which is defined as the level of success of students in studying subject matter at school which is expressed in scores. obtained from test results regarding a number of certain subject matter. According to Dimyati (2006) evaluation of learning outcomes is the culmination of the student learning outcomes process that must be carried out by educators where learning outcomes occur because of an evaluation. According to Arikunto (in Widoyoko, 2016) teachers need to carry out assessments of student learning outcomes because in the world of education, especially the world of school education, assessment of learning outcomes has a very important meaning, both for students, teachers and schools.

One of the teaching materials that can be used is Student Worksheets. According to Prastowo (2015), Student Worksheets are printed teaching materials that contain content or materials, summaries, and assignments that are equipped with guides and special instructions for their work and must be completed by students independently or in groups. Abd 0ne of learning model that can be applied to overcome the above problems is by developing student worksheets based on problem based learning. According to Han & Rosli, (2016); Ratnawati et al., (2020); Wajdi, (2017), The prolem based learning model is a learning model that is ideal for application in teaching and learning activities.

The problem based learning model has the advantage of encouraging students to think actively, creatively, imaginatively, reflectively, regarding models and theories, introducing ideas appropriately, trying new ideas, and encouraging students to gain self-confidence (Ariyanti,; Christiana et al , 2014; Desnylasari et al., 2016).

RESEARCH METHODS

The research design applied in this research is a development research design or Research and Development (R&D). R & D is a research method used to produce certain products and test the effectiveness of these products. According to Masyhud (2021) in his book entitled Educational Research Methods, development research is suitable for innovative-creative educational problem solving.

In this development research, we will develop a product in the form of a Student Worksheet (LKPD) for Class V Elementary School students learning Theme 3 Sub-theme 2 The Importance of Healthy Food for the Body. The development model used is the Borg & Gall development model (in Mashhud, 2021). This model has 10 steps as follows; (1) Preliminary research, (2) planning and development, (3) initial product design development, (4) product design validation, (5) initial product revision, (6) final products and mass product, and (10) product dissemination and implementation. In the preliminary research step The development research steps can be described in Diagram 1 as follows.

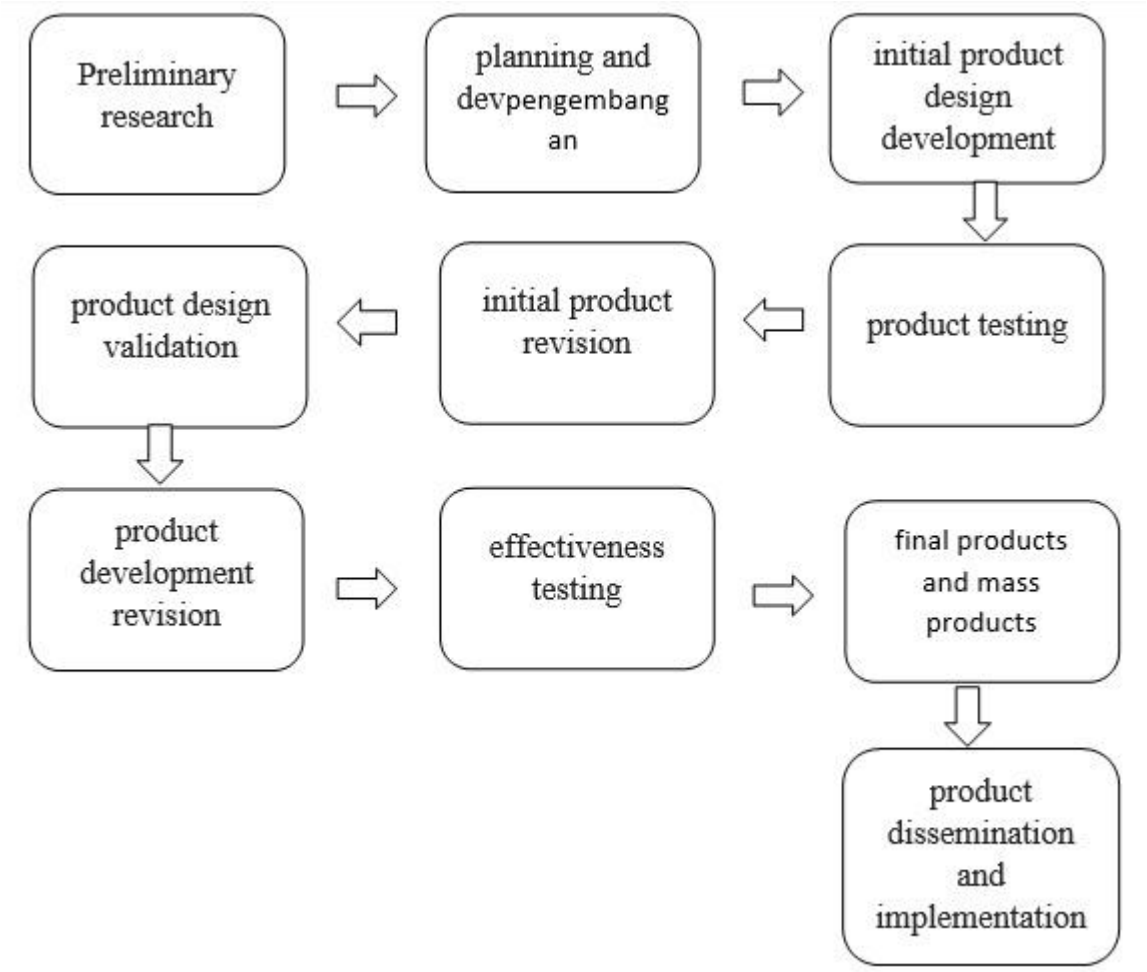

Diagram 1: Research Steps) development (Masyhud, 2021)

The subjects in this research were students in class Va and Class Vb in elementary schools. The research was carried out at Mentaos State Elementary School, Gudo District, whose address is Dermo Hamlet, Mentaos Village, Gudo District, Jombang Regency, East Java Province.

Research data collection was carried out using the methods: (1) observation, (2) interviews, (3) angkrt, rdab (4) learning outcomes test. After the data has been collected completely, the data is then analyzed using techniques: (1) descriptive statistical analysis, (2) expert validation test, (3) t-test, (4) relative effectiveness test, and (5) practicality test through analysis student questionnaire.

Descriptive statistical analysis is carried out to provide an overview of the general condition of the research subject and to determine the condition of the data to be analyzed, whether it meets the requirements or not. Expert validation test to find out whether the product produced meets the required validity standards or not. The t-test is intended to find out whether there is a difference in effectiveness between classes taught using the developed Student Worksheets and classes taught without using the developed Student Worksheets. The relative effectiveness test is used to find out how much the relative effectiveness of the Student Worksheets produced in this research is in achieving the learning objectives of the importance of healthy food for the body. Meanwhile, the practicality test was carried out to determine the practical level of the worksheets produced in this research for purposes as learning media. This practicality test is seen in terms of ease of implementation, workmanship and scoring process.

RESEARCH RESULTS AND DISCUSSION

The results of the research and discussion here are focused on two main research problems, namely: (1) what is

the process of developing student worksheets (LKPD) based on Problem Based Learning in learning theme 3 sub theme 2 the importance of healthy food for the body that is valid, effective and practical to improve the learning outcomes of fifth grade elementary school students, and (2) what is the validity, effectiveness and practicality of Problem Based Learning Worksheets (LKPD) in Learning Theme 3 Sub Theme 2 The Importance of Healthy Food.

Based on the results of the data collection and analysis carried out, it shows that the process of developing student worksheets (LKPD) based on Problem Based Learning in learning theme 3 sub theme 2 the importance of healthy food for the body is valid, effective and practical to improve the learning outcomes of class V school students The basis is carried out through 10 stages of development research according to Borg & Gall's opinion which includes the following steps: (1) preliminary research, (2) planning and development, (3) (1) preliminary research, (2) planning and development, (3)development of initial product design, (4) product design validation, (5) initial product revision, (6) product testing, (7) development product revision, (8) effectiveness testing, (9) final product, and (10) product dissemination and implementation. design development initial product, (4) product design validation, (5) initial product revision, (6) product testing, (7) development product revision, (8) effectiveness testing, (9) final product, and (10) product dissemination and implementation. Of the 10 stages of development, in this research only 8 stages were carried out, namely stage 1 to stage 8. Because up to stage 8 the problem of this research had been answered.

In the preliminary research step, to produce student worksheets that are valid, effective and practical, various activities have been carried out which include: reviewing manuscripts or writings related to student worksheets and problem based learning, visiting research locations to conduct observations, interviews and obtain data. required documentation. In the development planning step, planning and development of research titles, formulation of research problems, objectives and benefits of research, consolidation of literature reviews, development of research methods and procedures, planning and development of various instruments needed and research activity schedules are carried out. In the Initial Product Design Development step, a prototype is prepared based on the results of the development planning which is adapted to the needs of the student worksheet. Then, in the Product Design Validity step, a validity test is carried out by expert validators by 3 validators, namely one lecturer, one class teacher, and one supervisor. The results from the validator are then used as a basis for determining the feasibility of the product being developed. Based on the results of the product design validation, a revision of the initial product design was then carried out to improve the student worksheet product. After completing the revision of the initial product design, a small-scale trial of the product is then carried out.

The results of this trial use on a small scale are targeting a minimum of each component of the student worksheet to get a score from the checklist results of 80%. The next step based on the results of the development trials is to revise the development product. Revisions are made to components whose value is less than 80%. After all these steps have been carried out, a trial of the product's effectiveness is carried out by carrying out a trial use using 2 classes, with one class taught using the worksheet product developed and the other class without using student worksheets. The learning results of the two classes were then compared to determine the effectiveness of the product.

After the development process is complete, the next stage is an activity to determine the level of validity, effectiveness and practicality of the product to guarantee that this worksheet product is suitable for use in the learning process. To determine the level of validity of student worksheet products, validation tests have been carried out by 3 experts, namely one lecturer, one school supervisor and one class teacher. From the results of product validation tests from 3 validators, it is known that student worksheets based on problem based learning to improve learning outcomes on the importance of healthy food for the body in class V students in elementary schools have a validity level of 90%. According to Mashhud (2021), these results have a level of validity that is in the very adequate category; This means that it is very worthy to be tested to find out the level of effectiveness of the product. Therefore, based on the results of the product validity test, the development research process is then continued to test the effectiveness of the product.

Testing the effectiveness of student worksheet products was carried out using an experimental method using 2 classes, namely classes V-A and V-B at SDN Mentaos, Jombang Regency. The relative effectiveness test was carried out using the difference score between the pretest and posttest scores, both in the experimental class and

the control class. The results of the t-test carried out showed that the empirical t-value obtained was R 35.48, indicating it was greater than the t-table with a significance level of 0.05. This means that it can be concluded that there is a difference in learning outcomes between the experimental class which was taught using student worksheets based on problrm based learning compared to the control class which did not use student worksheets based on problrm based learning. Then, to find out the relative effectiveness of the experimental class which was taught using program-based learning worksheets compared to the control class which did not use student worksheets based on problrm-based learning, a Relative Effectiveness Test (ER) was carried out.

The results of the relative effectiveness test carried out showed a gain of 42.75%. This means that classes taught using student worksheets based on problem based learning are 42.75% more effective than classes taught without using student worksheets based on problem based learning. In other words, 42.75% of student learning achievement is influenced by student worksheets based on problem based learning. This means that there is still 57.23% of student learning achievement influenced by other factors outside student worksheets based on problem based learning. Other factors that influence student learning outcomes can be internal student factors, such as intelligence (IQ), learning motivation, learning skills, student expectations, individual health factors, and other factors. Student learning outcomes can also be influenced by external factors of students, such as teacher factors, parental guidance, completeness of learning facilities and infrastructure, or other extrinsic motivational factors. However, how big the influence of each factor outside of the student worksheet based on learning programs still needs to be done further research; Therefore, researchers who are interested in this problem need to carry out research involving these internal and external factors.

The next test to prove that this problem based learning student sheet has a good effectiveness value is to carry out a practicality test. This practicality test has very important value for the implementation of learning. This practicality test is to assess whether student worksheets based on program-based learning can make the implementation of the learning process easier or even more difficult. A product is said to be practical if it is easy to implement, does not confuse students, is easy to work on, is easy to correct and can achieve targets easily, and does not require complicated solutions and does not waste time. The practicality test was carried out through questionnaires and interviews with teachers and students regarding the implementation of learning using student worksheets based on program-based learning. The results of the analysis of the practicality test of student worksheets based on problem-based learning obtained a score of 94.60% and were included in the category of having very high practicality. With the results of the practicality test, it can be concluded that this student worksheet based on program-based learning is very practical and can be recommended for use by teachers in teaching science subjects to fifth grade elementary school students.

Based on the three types of tests on student worksheets based on program-based learning, it can be concluded that the worksheets developed have met the requirements as learning media for fifth grade elementary school students. This worksheet meets theoretical and practical requirements. Therefore, student worksheets based on program-based learning can be recommended for use by science teachers in elementary school for class V.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of data analysis in the previous section, conclusions can be expressed: (1) that the development of student worksheets based on program-based learning to improve learning outcomes on the importance of healthy food for the body in class V students in elementary schools was developed through the following stages: (a) preliminary research , (b) planning and development, (c) initial product design development, (d) product design validation, (r) initial product revision, (f) product testing, (g) development product revision, (h) effectiveness testing, (i) final product, and (j) product dissemination and implementation. initial product design development. However, of the 10 stages of development, in this research only 8 stages were carried out, namely stage a to stage h. Because up to stage 8 the research problem has been answered; (2) From the results of the validity, effectiveness and practicality tests, the results showed that the level of validity of student worksheet products based on program-based learning has been proven to have a validity level of 90% and is in the very feasible category.

Then, from the results of the effectiveness test carried out, it can be stated that the effectiveness test of the student worksheet product based on problrm based learning showed a moderate level of effectiveness, namely 42.75%,

compared to classes taught without using problrm based learning student worksheets. In other words, 42.75% of student learning achievement is influenced by student worksheets based on problem based learning. This means that there is still 57.23% of student learning achievement influenced by other factors outside student worksheets based on problem based learning. based learning. This means that there is still 57.23% of student learning achievement influenced by other factors outside student worksheets based on problem based learning. Other factors that influence student learning outcomes can be internal student factors, such as intelligence (IQ), learning motivation, learning skills, student expectations, individual health factors, and other factors; and external factors for students, such as teacher factors, parental guidance, completeness of learning facilities and infrastructure, or other extrinsic motivation factors.

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Meanwhile, the results of the practicality test show that this student worksheet based on program-based learning obtained a score of 94.60% and is included in the category of having very high practicality. With the results of this practicality test, it can be concluded that this student worksheet based on program-based learning is very practical and can be recommended for use by teachers who teach social studies in grade V elementary schools.

REFERENCES

1. Abdurrozak, R., Jayadinata, A. K., & ‘atun, I. (2022). Pengaruh Model Problem Based Learning Terhadap Kemampuan Berpikir Kritis Siswa. Pedagogika, 1, 163–183. https://doi.org/10.37411/pedagogika.v13i2.1354
2. Adawiyah, R. (2018). Implementasi Metode Problem Based Learning Pada Mata Pelajaran Al-Quran dan Hadist Untuk Meningkatkan Hasil Belajar Kognitif dan Penanaman Sikap Peduli Sosial Pada siswa MTs Negeri 1 Sidoarjo. Pedagogia : Jurnal Pendidikan, 7(1), 61–67. https://doi.org/10.21070/pedagogia.v7i1.1604
3. Akbar, S. (2017). Instrumen Perangkat Pembelajaran. Bandung: PT. Remaja Rosdakarya
4. Andi, P. (2015). Panduan Kreatif Membuat Bahan Ajar Inovatif. Yogyakarta: Diva Press.
5. Arikunto, S. (2012). Prosedur Penelitian Suatu Pendekatan Praktik. Jakarta: Rineka Cipta.
6. Azhar Arsyad. (2009). Media Pembelajaran. Jakarta: Rajawali Press.
7. Defiyanti, & Sumarni, W. (2020). Analisis Kemampuan Berpikir Kritis Setelah Penerapan Problem Based Learning Berbantuan Lembar Kerja Peserta Didik Bermuatan Etnosains. Phenomenon : Jurnal Pendidikan MIPA, 9(2), 206–218. https://doi.org/10.21580/phen.2019.9.2.4200
8. Depdiknas. (2008). Pengembangan Bahan Ajar. Direktorat Pembinaan Sekolah Menengah Atas Direktorat Jenderal Manajemen Pendidikan Dasar dan Menengah Departemen Pendidikan Nasional. Jakarta.3
9. Desnylasari, E., Mulyani, S., & Mulyani, B. (2016). Pengaruh Model Pembelajaran Project Based Learning Dan Problem Based Learning Pada Materi Termokimia Terhadap Prestasi Belajar Siswa Kelas Xi Tahun Pelajaran. Jurnal Pendidikan Kimia, 5(1), 134–142.
10. Dewi, T.N., & Susil owibowo, J. (2016). Pengembangan LKPD dalam Rangka Menunjang Pembelajaran Berbasis Scientific Approach pada Materi Laporan Keuangan Perusahaan Jasa. Jurnal Pendidikan, 4(3), 1-6
11. Dimyati. (2006). Belajar dan Pembelajaran. Jakarta: Rineka Cipta.
12. Dinda, Ambarita, A., Herpratiwi, H., & Nurhanurawati, N. (2021). Pengembangan LKPD Matematika Berbasis PBL Untuk Peningkatan Kemampuan Pemecahan Masalah di Sekolah Dasar. Jurnal Basicedu,

5(5), 3712–3722. https://doi.org/10.31004/basicedu.v5i5.1439
13. Effendi, R., Herpratiwi, H., & Sutiarso, S. (2021). Pengembangan LKPD Matematika Berbasis Problem Based Learning di Sekolah Dasar. Jurnal Basicedu, 5(2), 920–929. https://doi.org/10.31004/basicedu.v5i2.846
14. Elfina, S., & Sylvia, I. (2020). Pengembangan Lembar Kerja Peserta Didik (LKPD) Berbasis Problem Based Learning (PBL) dalam Meningkatkan Kemampuan Berpikir Kritis Siswa Pada Mata Pelajaran Sosiologi di SMA Negeri 1 Payakumbuh. Jurnal Sikola: Jurnal Kajian Pendidikan Dan Pembelajaran, 2(1), 27–34. https://doi.org/10.24036/sikola.v2i1.56
15. Fatimatuzzahro, F., Masyhud, M. S., & Alfarisi, R. (2021). Pengembangan Media Pembelajaran Komik Matematika Asik (MASIK) Berbasis Augmented Reality pada Materi Volume Bangun Ruang. Jurnal Ilmu Pendidikan Sekolah Dasar, 8(1), 7. https://doi.org/10.19184/jipsd.v8i1.24755
16. Han, S., Rosli, R., Capraro, M. M., & Capraro, R. M. (2016). The effect of Science, technology, engineering and mathematics (STEM) project based learning (PBL) on students' Achievement in four mathematics topics. Journal of Turkish Science Education, 13(Specialissue), 3–30. https://doi.org/10.12973/tused.10168a
17. Maryatun, M. (2017). Pengaruh Penggunaan Model Problem Based Learning (Pbl) Terhadap Hasil Belajar Ekonomi Siswa Kelas X Semester Genap Sma Pgri 1 Metro Tahun Pelajaran 2016/2017. PROMOSI (Jurnal Pendidikan Ekonomi), 5(2), 152–159. https://doi.org/10.24127/ja.v5i2.1225
18. Masyhud, M. Sulthon, (2015). Analisis Data Statistik Untuk Penelitian Pendidikan. Jember: Lembega Pengembangan Manajemen dan Profesi Kependidkan,
19. Masyhud, M. Sulthon, (2021). Metode Penelitian Pendidikan. Jember: Lembega Pengembangan Manajemen dan Profesi Kependidkan,
20. Ratnawati, D., Handayani, I., & Hadi, W. (2020). Pengaruh Model Pembelajaran PBL Berbantu Question Card terhadap Kemampuan Berpikir Kritis Matematis Siswa SMP The Influence of PBL Model Assisted by Question Card toward Mathematic Critical Thinking in JHS. Edumatica, Jurnal Pendidikan Matematika, 10(1), 44–51.
21. Sardiman. (2018). Interaksi dan Motivasi Belajar Mengajar. Depok: PT. Rajagrafindo Persada.
22. Susanto.2016. Problem Based Learning: Suatu Model Pembelajaran untuk Mengembangkan dan Meningkatkan Kemampuan Memecahkan Masalah. Jurnal Pendidikan Inovatif. 2(2),68-73
23. Wajdi, F. (2017). Implementasi Project Based Learning (Pbl) Dan Penilaian Autentik Dalam Pembelajaran Drama Indonesia. Jurnal Pendidikan Bahasa Dan Sastra, 17(1), 86. https://doi.org/10.17509/bs_jpbsp.v17i1.6960
24. Widoyoko, E. (2016). Penilaian Hasil Pembelajaran di Sekolah. Yogyakarta: Pustaka Pelajar.
25. Yustianingsih, R., Syarifuddin, H., & Yerizon, Y. (2017). Pengembangan Perangkat Pembelajaran Matematika Berbasis Problem Based Learning (PBL) untuk Meningkatkan Kemampuan Pemecahan Masalah Peserta Didik Kelas VIII. JNPM (Jurnal Nasional Pendidikan Matematika), 1(2), 258. https://doi.org/10.33603/jnpm.v1i2.563
26. Yuwono, M. R., & Syaifuddin, M. W. (2017). Pengembangan problem based learning dengan assessment for learning berbantuan smartphone dalam pembelajaran matematika. Beta: Jurnal Tadris Matematika, 10(2), 184–202. https://doi.org/10.20414/betajtm.v10i2.116