p. 244-255 email: elmidadpgmi@uinmataram.ac.id

THE DART BOARD MEDIA TO IMPROVE LEARNING OUTCOMES IN ELEMENTARY SCHOOLS

¹Sri Suwartini ²Isrohli Irawati, ³Berlyan Salsabilla Anindyta Susanto, ⁴Deni Dayanti, ⁵Denita Sekarningrum, ⁶Desta Anggi Fauziah, ⁷Dewi Rohmaningsih, ⁸Diah Anggun

¹³⁴⁵⁶⁷⁸Universitas Widya Dharma Klaten, ²SD Negeri 2 Prambanan, ¹ssuwartini66@gmail.com, ²atmajaira2@gmail.com, ³berlyansalsabilla10@gmail.com, ⁴denidayanti11@gmail.com, ⁵denitasekarningrum28@gmail.com, ⁶destaanggi10@gmail.com ⁷rohmaningsihdewi22@gmail.com, ⁸anggundiah08@gmail.com

ABSTRACT

This study aims to improve the learning outcomes of class IVB students of SD Negeri 2 Prambanan by using Dart Board media in learning Natural and Social Sciences (Ipas) on the material of Indonesian Cultural Wealth. This research is a Classroom Action Research (CAR), which is carried out in two cycles, each consisting of planning, implementation, observation, and reflection stages. The subjects of this study were class IVB students of SD Negeri 2 Prambanan in the 2024/2025 Academic Year. Data were collected through learning outcome tests, observations, and questionnaires. Data analysis was carried out using quantitative and qualitative approaches to measure improvements in learning outcomes and student responses to the use of Dart Board media. The results showed that using Dart Board media significantly improved student learning outcomes. In cycle I, the average student score increased from 68.69 in the pre-cycle stage to 79.47, while in cycle II it increased again to 82.63. In addition, students showed active involvement and positive responses to learning with this media. Thus, Dart Board media can be an innovative alternative in science learning to improve student learning outcomes and make the learning atmosphere more enjoyable and interactive.

Keywords: Learning Outcomes; Dart Board Media; Science Learning

INTRODUCTION

Learning changes a person's behavior and understanding of knowledge, skills, and values in society and education. (Agusti & Aslam, 2022). The position of educators is significant as facilitators in this educational process, directing and building the potential of students in various fields, including social potential, intellectual potential, skill potential, creative potential, and other fields. In addition to functioning as facilitators, communication between educators and students can be used to observe the learning process. Educators' provision of learning materials is the basis for students 'learning achievements. So that the components obtained by students can be output as learning outcomes from the student learning process (Agusti & Aslam, 2022).

El Midad : Jurnal Jurusan PGMIp-ISSN 2087-8389 e-ISSN 2656-4289

vol. 17 No. 2 Agustus 2025
p. 244-255

website: http://journal.uinmataram.ac.id/index.php/elmidad email: elmidadpgmi@uinmataram.ac.id

Learning outcomes are the abilities students acquire after receiving learning experiences from educators. According to Hutapea (2019), in Agusti & Aslam (2022), some experiences students receive include the affective, cognitive, and psychomotor domains. According to Wibowo et al. (2021), in Agusti & Aslam (2022), learning outcomes play an important role in the learning process because, with these results, educators can find out how the development of experience or knowledge that students have obtained helps them achieve their learning goals through the following teaching and learning process.

Media is needed to transfer knowledge from educators to students when delivering material during teaching and learning activities. According to Purba et al. (2020), the media is an essential supporting component in providing knowledge to students. With the presence of media, the teaching process is more optimal and is understood more quickly by students (Neni Isnaeni & Dewi Hildayah, 2020). Media is also a means and infrastructure that educators can use as a tool to deliver material. However, suppose students do not understand the subject matter in depth, even if the media available is also less than optimal. In that case, the students' abilities related to the material delivered will also not be optimal, especially in social studies learning (Agusti & Aslam, 2022).

In learning Ipas, especially in elementary schools, various skills need to be done, especially process skills (Syofyan & Soraya, 2018). The primary role in this case is the educator, who facilitates the process of student skills, where natural science is still considered difficult because the delivery method is still monotonous. The learning method is challenging to understand, as it affects student learning outcomes (Wulandari et al., 2019). In line with the results of the researcher's discussion with the fourth-grade homeroom teacher at SDN 2 Prambanan, which was carried out during the observation, the students' Ipas learning outcomes are still low, especially in the material on Indonesian Cultural Wealth. Judging from the daily test scores, only half of the fourth-grade students meet the minimum completion criteria. The minimum completion criteria are met if the score is more than 75. Based on the daily test results, it is known that the students' learning outcomes have not reached the optimal level and are still below the targeted standard, so efforts are needed to improve. This can be caused by several factors, such as students' challenges in absorbing information. In addition, the learning media used still has the potential to be developed to be more innovative and interactive. Learning media can also be optimized to increase student involvement in the learning process. With a more varied and engaging approach, students' understanding of the material is expected to increase, improving their learning outcomes.

email: elmidadpgmi@uinmataram.ac.id website: http://journal.uinmataram.ac.id/index.php/elmidad

One approach that can be applied to improve student understanding is to use educational game media. According to research (Putri et al., 2025), using game media in Ipas learning can increase student motivation and understanding because it involves a more enjoyable and interactive learning experience. In this case, to improve learning outcomes, learning media is used, namely the Dart Board media. Through the use of the Dart Board media, it is expected to improve student learning outcomes, and students become more active and able to receive material not only through memorization but also to understand what is conveyed by the educator.

The use of dartboard media in research conducted by Rahman et al. (2022) shows that game-based learning methods can increase student involvement in science learning and improve their understanding of concepts. This can be obtained through the experiences and information children get from the past. For this reason, it is necessary to create innovative, creative, interesting, and inexpensive learning media (Lestari, 2022). This theory can be interpreted as innovative learning and involving student participation. One way to involve student participation in learning is by using learning media.

One of the learning media that can be used in the material of Indonesian Cultural Wealth is the Dart Board media. A dartboard is a round-shaped game used as a darts target. Dart Board media is used in the Dart Board game, which uses small arrows thrown at a round board. Players must select several categories on a dartboard by throwing the arrow into the desired category. The board contains points that will be obtained if they succeed in answering questions related to the material of Indonesian Cultural Wealth. Through this Dart Board media, students can understand the material they are studying more actively, train their concentration, and strengthen their memory of Indonesian Cultural Wealth, so that it can improve student learning outcomes.

Based on the problems and results of previous studies, this study aims to determine how the learning outcomes and the process of using Dart Board media improve students' understanding of Indonesian Cultural Wealth in grade IV of elementary school. It is hoped that with the implementation of this method, students will not only understand Indonesian Cultural Wealth more deeply, but also have a more enjoyable and meaningful learning experience so that a study will be conducted with the title "Improving Student Learning Outcomes Through Dart Board Media in Science Learning on Indonesian Cultural Wealth Material in Grade IV of Elementary School 2 Prambanan in the 2024/2025 Academic Year".

email: elmidadpgmi@uinmataram.ac.id website: http://journal.uinmataram.ac.id/index.php/elmidad

LITERATURE REVIEW

Al-Manik (2021) argues that using media in the learning process will create a fun, non-boring learning atmosphere, make students interested, and foster learning motivation in understanding the material, so a learning atmosphere while playing is created, namely with the Dart Board learning media. The study (Kurniawati & Bekti, 2020) shows that the dart board is a creative, engaging, easy-to-use, and easy-to-carry learning medium that students can use anytime. The use of Dart Board media in research conducted by Rahman et al. (2022) shows that game-based learning methods can increase student involvement in science learning and improve their understanding of concepts. In this case, the use of Dart Board learning media can be a solution to improving student learning outcomes. This media can provide a learning experience in a more active, interactive, and enjoyable way.

METODOLOGY

This study uses the Classroom Action Research (CAR) method of the Kemmis and McTaggart model through four stages, namely the planning, implementation, observation, and reflection stages in each cycle. The study subjects were class IVB students of SD Negeri 2 Prambanan, with 19 students, consisting of 11 males and eight females. The data collection techniques used were tests, observations of student learning activities, and student questionnaires, which were then analyzed quantitatively and qualitatively. The indicators of the success of this study are: (1) 60% of students showed an increase in learning outcomes that achieved values above the KKTP through tests, (2) 70% of students showed activeness in learning as seen through observations of student activities during the learning process, and (3) 75% of students gave positive responses through satisfaction questionnaires regarding learning using Dart Board media.

RESULT AND DISCUSSION

Cycle I

The implementation of cycle I learning is based on four stages: planning, action, observation, and reflection. The planning stage of cycle I includes a) communicating the schedule or time of learning implementation to students when face-to-face before the cycle takes place, b) determining competency standards and indicators and learning objectives that are by the material, c) compiling teaching modules according to the learning objectives that have been designed, d) determining materials related to learning, namely Indonesian Cultural

email: elmidadpgmi@uinmataram.ac.id

website: http://journal.uinmataram.ac.id/index.php/elmidad

Wealth, e) creating Student Worksheets (LKPD) that will be given to students, f) preparing observation sheets for educators and students as a tool for data acquisition.

Implementing the action stage in cycle I begins with students and educators preparing themselves according to the agreed schedule. Then continued with the initial activities, namely the educator conditioning the students, opening the learning with greetings, praying led by one of the students, motivation, and apperception. In the core activities, students are given directions about the game's rules that will be implemented and are allowed to ask questions if an explanation is not understood. After that, students are asked to form groups. Students play the Dart Board game, answer questions, and make presentations. Learning ends by making conclusions, providing motivation to students, then praying and greeting

Observations were carried out using the educator and student observation sheets during the learning process. From the observation sheet on the educator, the educator has carried out learning from the teaching module that has been made. Learning has been carried out smoothly, even though the educator was not optimal at the end of the learning. Several steps were missed by the educator in the teaching and learning process, namely when concluding the material, which did not involve students, and reflection on learning, which also did not involve students in its application, and had not carried out learning apperception. From the results of observations on students, students have shown their activeness and motivation during the learning process, but learning in this class still does not fully attract students' attention. In the reflection stage, it was found that when grade IV students of SDN 2 Prambanan learned Ipas material on Indonesian Cultural Wealth using the Dart Board game, their learning completeness and absorption increased compared to before using the Dart Board game learning media. The following table shows students' learning completeness and absorption in cycle I.

Table 2. Learning Completeness and Absorption Capacity of Students

No	Value Interval	Amount	
1	95 - 100	2	
2	90 - 94	1	
3	85 - 89	1	
4	80 - 84	4	
5	75 - 79	5	
6	≤ 74	6	
Amount		19	
Percentage of Completion		68,42%	
Percentag	rcentage of Absorption Capacity 79,47%		

Based on Table 2 above, it can be seen that the value of completing student learning outcomes in Ipas learning on the material of Indonesian Cultural Wealth has increased, but is still not optimal. Students who get scores with a score interval of 95-100 are two people, a score interval of 90-94 is one person, a score interval of 85-89 is one person, a score interval of 80-84 is four people, a score interval of 75-79 is five people and a score interval \leq 74 is six people. There was an increase in student scores from the initial conditions (pre-cycle). In cycle I, the average score of students increased from 68.69 to 79.47. The percentage of student learning completion increased from 57.89% to 68.42%, and the percentage of absorption capacity increased from 68.69% to 79.47%. The number of students who achieved a KKTP score of > 75 also increased, namely from 11 students to 13 students, or more than 50% of the total number of class IV students at SD Negeri 2 Prambanan.

However, the results were not optimal because six students were still below the Learning Objective Achievement Criteria (KKTP). Therefore, action is needed in cycle II to improve the learning process in cycle I. Steps to improve the learning process between cycle I and cycle II, there are differences in learning between cycle I and cycle II. The difference lies in the place of implementation and the games carried out in both cycles.

Cycle II

The implementation of cycle II learning is based on four stages: planning, action, observation, and reflection. The planning stage in cycle II includes a) determining Basic Competencies, learning objectives and indicators that are by the understanding of the material on Indonesian Cultural Wealth in grade IV, b) preparing teaching modules that are by learning objectives, c) preparing Dart Board learning media to be more interesting than cycle I for students, d) preparing the necessary learning resources, e) making observation sheets for students and educators, f) making student assessment sheets, namely skills instruments and Student Worksheets (LKPD).

In the action stage in cycle II, the Dart Board media is implemented outside the classroom, so students are more interested and motivated. Students and educators prepare themselves according to the previously agreed schedule. The initial activity begins with the educator conditioning the students before learning. Then the educator opens the learning with greetings, a prayer led by one of the students, conveying the learning objectives, singing the national song, motivation, and appreciation. The core activity begins with delivering the material "Indonesian Cultural Wealth". Students are allowed to ask questions if there is material that is not yet understood. After that, students are divided into several groups, listen

email: elmidadpgmi@uinmataram.ac.id

El Midad: Jurnal Jurusan PGMI

p-ISSN 2087-8389 e-ISSN 2656-4289

to instructions on the rules of the game, work on the Student Worksheet (LKPD), and present the results of their work. Learning ends with making conclusions with students, reflection, apperception, praying led by one of the students, and greetings.

The observation stage is carried out when the learning process is taking place. From the educator's observation sheet results, the educator has improved in this second cycle, namely, when in cycle I, the educator had not involved students in making conclusions about the learning material. However, in this second cycle, the educator has involved students in making conclusions about the material. In addition, the educator has also made improvements by reflecting at the end of the learning session with students. From the student observation sheet results, students have been good at following the Ipas learning of the Indonesian Cultural Wealth material using the Dart Board learning media. Students have shown their activity and motivation during the learning process, where the learning and games are carried out, which are different from cycle I. Also, I make students more interested and make learning more enjoyable, creating more interactive learning between educators and students. In the reflection stage, it was found that the application of Dart Board learning media in the Ipas learning of the material of Indonesian Cultural Wealth increased students' learning completion and absorption in cycle II. In addition, students in cycle II were much more active and enthusiastic than in the previous cycle. The following table shows students' learning completion and absorption in cycle I..

Table 3. Learning Completeness and Absorption Capacity of Students

No	Score Interval	amount	
1	95 - 100	3	
2	90 - 94	1	
3	85 - 89	2	
4	80 - 84	6	
5	75 - 79	2	
6	≤ 74	2	
Amount		19	
Number of Students Not Completed		2	
Percentage of Completion		89,47%	
Percentage of Absorption Capacity		82,63%	

Based on Table 3 above, it can be seen that the value of completing student learning outcomes in Ipas learning on the material of Indonesian Cultural Wealth has increased. Students who get scores with a score interval of 95-100 are three people, a score interval of 90-94 is one person, a score interval of 85-89 is two people, a score interval of 80-84 is six people, a score interval of 75-79 is two people and a score interval \leq 74 is two people. The

email: elmidadpgmi@uinmataram.ac.id

value of students in Ipas learning on the material of Indonesian Cultural Wealth using the Dart Board learning media shows an increase in student learning compared to the previous cycle. In cycle II, the average value of students increased from 79.47 to 82.63. The percentage of student learning completion increased from 68.42% to 89.47%, and the percentage of absorption capacity increased from 79.47% to 82.63%. The number of students below the Minimum Learning Objective Achievement Criteria (KKTP) also decreased to 2.

Student Responses to the Use of Dart Board Media

The following are the results of research based on a questionnaire filled out by 19 students in grade IV of SDN 2 Prambanan regarding the use of Dart Board media in learning the material on Indonesian Cultural Wealth.

Table 4. Student Responses to the Use of Dart Board Media

Statement	Strongly agree	Agree	Positive Response
1	12 (63.16%)	6 (31.58%)	18 (94.74%)
2	10 (52.63%)	8 (42.11%)	18 (94.74%)
3	13 (68.42%)	5 (26.32%)	18 (94.74%)
4	8 (42.11%)	10 (52.63%)	18 (94.74%)
5	7 (36.84%)	11 (57.89%)	18 (94.74%)
6	6 (31.58%)	12 (63.16%)	18 (94.74%)
7	10 (52.63%)	7 (36.84%)	17 (89.47%)
8	11 (57.89%)	6 (31.58%)	17 (89.47%)
9	9 (47.37%)	7 (36.84%)	16 (84.21%)

Table 4 above shows that as many as 92.98% of students positively responded to using Dart Board media in learning the material of Indonesian Cultural Wealth. This result shows the indicator "Very Good". The use of Dart Board media in learning the Ipas material of Indonesian Cultural Wealth in class IV B has been proven to provide positive responses and impacts, especially in increasing student motivation, involvement, and understanding. Most students feel more interested and active, and find it easier to understand the material with this medium.

DISCUSSION

Based on research data in the field, the detailed discussion of learning outcomes in the pre-cycle, cycle I, and cycle II will be described as follows. The recapitulation of the percentage of learning completion and student absorption is presented in the following table.

El Midad : Jurnal Jurusan PGMI

p-ISSN 2087-8389 e-ISSN 2656-4289 website : http://journal.uinmataram.ac.id/index.php/elmidad

email: elmidadpgmi@uinmataram.ac.id

Table 5. Recapitulation of Learning: Completeness and Absorption Capacity of Students Pre-Cycle, Cycle I, and Cycle II

Criteria	Pra-cycle	cycle I	cycle II
Learning Completion	57,89%	68,42%	89,47%
Absorption Capacity	68,69%	79,47%	82,63%
Number of Students Completed	11	13	17
Number of Students Not Completed	. 8	6	2

Based on Table 5, above, the percentage of learning completion and students' absorption in the IPAS learning of Indonesian Cultural Wealth material using Dart Board learning media in each cycle shows an increase. In the Pre-Cycle, the percentages of learning completion and students' absorption were 57.89% and 68.69%, increasing to 68.42% and 79.47% in cycle I and then increasing again in cycle II to 89.47% and 82.63%.

Based on the analysis of students' learning completion and absorption in learning Natural and Social Sciences (Ipas) with the material of Indonesian Cultural Wealth, it shows a significant increase in each learning cycle. This increase occurs due to increased student activity that aligns with the increase in educator skills in teaching. Better learning outcomes reflect students' active involvement during the learning process and the effectiveness of educators' teaching strategies. One of the factors that contributed to this increase was the use of Dart Board media in the learning process.

Based on the presentation of learning completion data and the students' absorption in the Ipas learning of the material of Indonesian Cultural Wealth using the Dart Board media in class IV of SDN 2 Prambanan, it shows an increase in each cycle. The use of the Dart Board media in the Ipas learning of the material of Indonesian Cultural Wealth in class IV of SDN 2 Prambanan has been proven to impact student learning outcomes significantly. This media can change students' learning patterns from being initially passive and less enthusiastic to being more active, enthusiastic, and having higher involvement in learning. Using the Dart Board media, students understand the material being taught better, can work together in groups better, are more agile in answering questions, are responsible for the tasks given, and are more motivated to continue learning and improve their academic achievement.

Some main benefits of using Dart Board media for students include: 1) This media is game-based, creating a more enjoyable and challenging learning atmosphere. Thus, students are more enthusiastic about participating in learning and are motivated to continue to improve their understanding of the material being taught. 2) Through this medium, students are directly involved in learning activities by doing physical and cognitive activities that

website: http://journal.uinmataram.ac.id/index.php/elmidad

encourage more profound understanding. Direct interaction with the material presented in games can enhance a richer and more meaningful learning experience. 3) The Dart Board game requires students to focus on answering the questions given, so it indirectly trains concentration and increases accuracy in understanding and solving problems. Students also learn to make decisions quickly and accurately when answering the questions. 4) By connecting questions to certain zones on the game board, students can more easily associate the material being studied more interactively and enjoyably. This helps improve their memory and understanding of the concepts being taught. In addition, a fun learning process can reduce boredom in learning and increase the effectiveness of delivering material. 5) In these games, students often work in groups, encouraging them to communicate, discuss, and collaborate to solve the challenges. This helps them develop social and teamwork skills to benefit their academic and social lives.

This statement is supported by research conducted by Sutraningsih et al. (2021), which states that Dart Board game media can make learning more fun, effective, and efficient. This media helps students understand the material better so that it is more easily absorbed and meaningful in their memory. Thus, using a Dart Board in learning can improve the overall quality of learning and positively impact students' learning experiences.

With the various benefits mentioned, the use of Dart Board media has proven effective in helping students understand the contents of the material being taught and increasing their engagement in the learning process. This success is also seen in learning Ipas on the material of Indonesian Cultural Wealth in class IV SDN 2 Prambanan, where students showed a significant increase in learning outcomes after using Dart Board media. Therefore, this media can be used as an innovative alternative in learning to create a more dynamic, interactive, and meaningful learning atmosphere for students. In addition, game-based learning media such as Dart Board can be a model in increasing the effectiveness of learning in various subjects, thus creating a more creative and innovative educational ecosystem.

CONCLUSION

Based on the discussion, the classroom action research in improving student learning outcomes through the Dart Board media can be concluded as follows: (1) The use of Dart Board media can improve student learning outcomes in each cycle, in addition, learning on the material of Indonesian Cultural Wealth also looks active and enjoyable, (2) The results of learning scores in the Material of Indonesian Cultural Wealth increased from cycle I to cycle website: http://journal.uinmataram.ac.id/index.php/elmidad email: elmidadpgmi@uinmataram.ac.id

II. The learning outcomes in cycle I showed that six out of 19 students were still below the Educational Objective Achievement Criteria (KKTP), with a class average of 79.47. The learning outcomes in cycle II showed that two students were still below the Educational Objective Achievement Criteria (KKTP) with a class average of 83.63, and (3) Responses to the media showed that as many as 92.98% of students gave a positive response to the use of Dart Board media in learning the material of Indonesian Cultural Wealth. These results show the indicator "Very Good". The use of Dart Board media in learning Indonesian culture material in grade IV of SDN 2 Prambanan has been proven to provide positive responses and impacts, especially in increasing motivation, involvement, and understanding of students. Most students feel more interested and active, and find it easier to understand the material with this medium.

REFERENCE

- Agusti, N. M., & Aslam, A. (2022). Efektivitas Media Pembelajaran Aplikasi Wordwall Terhadap Hasil Belajar IPA Siswa Sekolah Dasar. *Jurnal Basicedu*, 6(4), 5794–5800. https://doi.org/10.31004/basicedu.v6i4.3053
- Al-Manik, S. K. Y. (2021). Pengembangan Media Dart Board Untuk Meningkatkan Hasil Belajar Ipa Kelas Ii Di Sdit Al Akbar Karanggayam Srengat Blitar. *Jurnal Penelitian Pendidikan*, *Agama Dan Kebudayaan*, 7(1), 78–95. https://jurnal.iaih.ac.id/index.php/inovatif/article/view/209
- Kurniawati, H., & Bekti, S. (2020). Pengembangan Media Pembelajaran Papan Dart pada Materi Bangun Datar. *Prosiding Seminar Nasional IKIP Budi Utomo*, 1(01), 215–222. https://doi.org/10.33503/prosiding.v1i01.1028
- Neni Isnaeni, & Dewi Hildayah. (2020). Media Pembelajaran Dalam Pembentukan Interaksi Belajar Siswa. *Jurnal Syntax Transformation*, 1(5), 148–156. https://doi.org/10.46799/jst.v1i5.69
- Purba, R. A., Sudarso, A., Silitonga, H. P., Sisca, S., Supitriyani, S., Yusmanizar, Nainggolan,
 L. E., & Sudirman, A. (2020). Aplikasi Teknologi Informasi: Teori dan Implementasi.
 In Angewandte Chemie International Edition, 6(11), 951–952. (Vol. 2, Issue 1).

El Midad: Jurnal Jurusan PGMI

p-ISSN 2087-8389 e-ISSN 2656-4289

website: http://journal.uinmataram.ac.id/index.php/elmidad

Vol. 17 No. 2 Agustus 2025 p. 244-255

email: elmidadpgmi@uinmataram.ac.id

Putri, T., Ramadhani, L., Vk, A. M., Dinova, C., & Desi, R. (2025). Efektivitas Penggunaan Media Pembelajaran Wordwall Untuk Meningkatkan Motivasi Belajar IPAS.

- Rahman, N., Dewi, N. K., & Nurhasanah, N. (2022). Pengembangan Media Pembelajaran Pop-Up Book Pada Mata Pelajaran IPS Materi Keberagaman Budaya Indonesia Pada Siswa Kelas IV SDN 15 Mataram. Jurnal Ilmiah Profesi Pendidikan, 7(3c), 1846-1852. https://doi.org/10.29303/jipp.v7i3c.875
- Sutraningsih, S., Mustami, M. K., Jamilah, J., & Damayanti, E. (2021). Pengembangan Media Pembelajaran Dart Board Bio pada Materi Sistem Pencernaan. Bioedusiana: Jurnal Pendidikan Biologi, 6(2), 291-304.
- Syofyan, H., & Soraya, R. (2018). Pelatihan Penerapan Keterampilan Proses dalam Pembelajaran Ipa di SD Pelita 2. Jakarta Barat Jurnal Abdimas, 4(2), 216-220. https://digilib.esaunggul.ac.id/public/UEU-Journal-18480-11_0877.pdf
- Wulandari, B., Ardiansyah, F., Eosina, P., & Fajri, H. (2019). Media Pembelajaran Interaktif Krea-Tif, Ipa Untuk Sekolah Dasar Berbasis Multimedia. https://doi.org/10.32832/kreatif.v7i1.2028