ETDC Indonesian Journal of Research and Educational Review
Volume 4, No. 4, 2025, pp 1466 - 1477
e–ISSN 2809-3682
p–ISSN 2809-7505
https://doi.org/10.51574/ijrer.v4i4.3875

Cooperative Learning Model of Time Based Learning Type Assisted by Media Box: Elementary School Students' IPAS Learning Outcomes

Parida[1], Ira Irviana[2], Nur Afni[3]
[1, 2, 3] Prodi Pendidikan Guru Sekolah Dasar, Universitas Islam Makassar, Indonesia

Article Info

Article history:

Received June 15, 2025
Revised August 29, 2025
Accepted September 03, 2025

Keywords:

Cooperative Learning;
Elementary School;
IPAS Learning;
Media Box;
Time Based Learning.

ABSTRACT

The background of the research is the low academic achievement of students; only 37.03% of 27 students achieved the minimum completion criteria in the preliminary study. Therefore, this study examines the application of a time-based learning-type cooperative learning model assisted by media boxes to improve the learning outcomes of social studies/IPAS of elementary school. This study uses classroom action research with the Kemmis and McTaggart model research design. This research was conducted with grade V students at 108 Moncongloe Home Base. This research used observation, tests, and documentation instruments. The results of the analysis showed a significant increase in student learning outcomes after applying the model using media boxes. This can be seen in the increase in the average score of student learning outcomes from cycle I, which is 56.14%, to cycle II, which is 77.62%. Thus, a time-based learning-type cooperative learning model assisted by media boxes can improve student learning outcomes.

Corresponding Author:

Parida,
Prodi Pendidikan Guru Sekolah Dasar, Universitas Islam Makassar, Indonesia
Email: paridha406@gmail.com

1. INTRODUCTION

Education is an absolute necessity for building a nation. It is essential for every individual (Zolfaghari, 2015; Irviana et al., 2020). Current education demands that teachers transform learning at school into enjoyable learning and transform students' mindsets (Schleicher, 2018; Rissanen et al., 2019; Afni, 2020). As time goes by, with the rapid development of science and technology, teachers are also required to develop their skills in educating students (Hamzah & Irviana, 2022; Darling-Hammond et al., 2024). In the learning process, educators must be professional in presenting the material (Ping, 2018; Davis, 2021; Mulyadi et al., 2021). Therefore, it is necessary to foster and develop students' abilities and knowledge in the teaching and learning process.

The author's preliminary study, which included observations at elementary school 108 Moncongloe Home Base, found that the social studies learning outcomes for fifth-grade students were relatively low, based on the final exam scores of 27 students. Ten students achieved a passing grade of 80, exceeding the minimum competency

requirement of 70. Meanwhile, 17 students failed to achieve a passing grade, achieving a passing grade of 60. This situation indicates low student competency mastery in learning. Therefore, developing creative, innovative, interactive, and educational learning strategies can help students improve their learning outcomes. Therefore, to overcome this problem researchers conducted research using the Time-Based Learning (TBL) model.

Team-based learning (TBL) is an approach that can be applied to deliver teaching materials more effectively, especially in classes with large numbers of students (Yuretich & Kanner, 2015; Jabbar et al., 2018; Burgess et al., 2019). Team-based learning encourages students to work in groups or interact socially to actively solve problems (Ruder et al., 2021; Lin & Lin, 2023). The primary goal of time-based learning (TBL) is to ensure that students have the opportunity to practice applying concepts to solve problems (Carpenter et al., 2022; Parrish et al., 2023). Therefore, TBL is designed to provide students with conceptual and procedural knowledge (Rotgans et al., 2019; Burgess et al., 2020; Roossien et al., 2022). Michaelsen and Sweet say TBL's main goal is to help students focus on concepts and practice using them to solve problems (Espey, 2018; Arbie et al., 2021).

The advantages of time-based learning (TBL) include building student motivation for independent learning and group work, enabling them to learn the material more effectively and engagingly, while also enhancing understanding from concept to implementation (Odell, 2018; Spiller, 2022). This objective utilizes steps and methods for managing study groups and assigning assignments, both individually and in groups (Michaelsen & Sweet, 2023). The time-based learning model has several disadvantages, including (1) the need for teachers to consider various student characteristics when forming groups, such as level and learning style; (2) young learners may find it challenging because they often prioritize language form over communication; and (3) there may be a lack of focus on language as students concentrate on completing assignments.

Additionally, time-based learning (TBL) is used to provide students with the opportunity to practice their individual and team problem-solving skills (Dearnley et al., 2018; Swanson et al., 2019; Sterpu et al., 2024). This ensures they not only understand the theory but also apply it practically to solve problems (Alizadeh et al., 2024). Therefore, researchers conducted research using the Time-Based Learning (TBL) model, supported by media boxes.

A media box is a box-shaped medium containing learning materials to attract students' attention (Hilyana & Ermawati, 2024; Aminah & Yusnaldi, 2024). Media boxes are used to improve the quality of learning, achieve better learning outcomes, and increase student motivation and interest in learning (Hardiansyah & Wahdian, 2023; Wulandari, 2024). Media boxes can help students learn the material in a more enjoyable and engaging way. Their use will make students much more active and make it easier to understand the learning (Khairunnisa & Wulandari, 2025).

The advantages of media boxes are described as follows (Sudarto et al., 2024; Apriana & Budiarti, 2025): (1) Media boxes can attract students' attention and

motivation due to their visuals, colors, and shapes; (2) Media boxes make it easier for students to understand the material; (3) They make it easier for teachers to explain learning materials; and (4) Media boxes can help develop students' abilities. The disadvantages of media boxes are described as follows: (1) Using media boxes requires quite a lot of costs during the manufacturing process. (2) The smart box tends to be large and is difficult to carry around. Therefore, this study examines the application of a time-based learning-type cooperative learning model assisted by media boxes to improve the learning outcomes of social studies in elementary school.

2. METHOD

This study was classroom action research (CAR) conducted over two cycles to test the implementation of a time-based learning model assisted by media boxes in improving fifth-grade students' science learning outcomes. This research was conducted at elementary school 108 Moncongloe Home Base, with three meetings per cycle. The subjects were 27 fifth-grade students, consisting of 13 boys and 14 girls. This study used the Kemmis and McTaggart research model, which is a development of Kurt Lewin's model. The stages of the Kemmis and McTaggart CAR model include planning, acting, observing, and reflecting (Kemmis et al., 2013). The following is a description of the steps for classroom action research in figure 1.

Figure 1. Classroom Action Research Design Model Kemmis and Taggart

This study used data collection techniques in the form of teacher and student observations, test sheets, and documentation. The test consisted of 15 questions, 10 multiple-choice questions, and 5 essay questions. Observations recorded the development of teacher and student activities during the learning process, while

documentation served as supporting data to strengthen the accuracy and credibility of the research results.

The data used to analyze learning success are tests administered after each learning activity. Learning outcome tests can be analyzed using the following simple percentage formula:

$$Pn = \frac{n \times 100\%}{N}$$

Information:
Pn = Percentage of student learning outcomes
n = Total student scores
n = Maximum score
100 = Constant value/fixed number

Table 1. Classification of Learning Outcome Scores

NO	Value	Assessment Categories
1	80-100	Excellent
2	66-79	Good
3	56-65	Fair
4	40-55	Poor
5	30-39	Fail

3. RESULTS AND DISCUSSION

Results

Cycle I

The implementation of the first cycle of learning showed that many teacher and student activities were poorly implemented, and many students still failed to achieve the minimum completion criteria (National Qualifications for Primary and Secondary Education). Therefore, the second cycle required improvements.

Planning

Before conducting the research, the researcher first made the following preparations:

a. The researcher and teacher analyzed the Basic Competency Standards of the Independent Curriculum that would be taught to students. They developed teaching modules and student activity sheets with cultural heritage material.
b. Developed teacher and student observation guidelines.
c. Prepared the media box to be used.

Implementation

The researcher conducted the learning based on the developed module. In the introduction, the teacher opened the lesson by greeting, smiling, and praying according to each student's religion and beliefs. The teacher took attendance to check student

attendance, explained the learning objectives, divided students into groups, and then directed students to read the learning material.

The core activities were carried out in seven stages, focusing on the topic "The Concept of Cultural Heritage." The core learning activities are as follows:1) The teacher explains the material regarding the concept of cultural heritage. 2) The teacher administers an individual test, 3) The teacher administers a group test on the media box, 4) The teacher evaluates any appeals, 5) The teacher provides feedback on student work. 6) The teacher directs students to complete group assignments. 7) The teacher directs students to present their group work. Closing activities: 1) The teacher appreciates and motivates students, 2) The teacher provides a conclusion, 3) The teacher closes the lesson with a prayer and greeting.

Observation

The observation stage consists of teacher and student observations. Observations are conducted by marking (✓) if the indicators are met. This procedure is done at each meeting, and there are 16 indicators observed in the time-based learning model. In the first meeting of cycle I, the overall score for teacher activity was 9, with a maximum score of 16, with a percentage of 56.25% being considered in the poor category. Meanwhile, the overall student activity score was 7 with a maximum score of 16, representing 43.75% of the students, categorized as "poor."

In the second meeting, the overall teacher activity score was 11 with a maximum score of 16, representing 68.75% of the students, categorized as "poor." Meanwhile, the overall student activity score was 10 with a maximum score of 16, representing 62.5% of the students, categorized as "poor." In the third meeting, the analysis of student learning outcomes using the time-based learning model with the aid of media boxes in cycle I showed an average score of 56.14%, representing "sufficient." The following presents the IPAS learning outcomes in Cycle I at Table 2.

Table 2. IPAS Learning Outcomes in Cycle I

No	Category	Interval	Frequency	Score Weight	% Students	Average
1	Very Good	80-100	4	325	14,81	56,14% Enough Category
2	Good	66-79	6	435	22,22	
3	Fair	56-65	- 14	- 659	- 51,85	
4	Poor	40-55	3	97	11,11	
5	Failure	30-39				
	Total		27	1,516	100%	

Table 2 showed the student learning outcomes data for Cycle I: only 10 students achieved the minimum competency, while 17 students did not. This indicates that the learning model implemented in Cycle I was not fully effective in improving student learning outcomes. Cycle II improved the learning process because many students still needed further guidance.

Reflection

During the Cycle I reflection phase, many students were still less active during the learning process and lacked confidence in expressing their opinions and answers. Furthermore, during group learning, some students were reluctant to collaborate with their group mates, and the media box used provided incomplete and uninteresting materials. Consequently, many students still struggled to understand the material presented. This lack of understanding among students was caused by the new time-based learning model being used. Therefore, the teacher needed to improve the learning process in Cycle II.

Cycle II

Cycle II consisted of three meetings, with the final meeting being a test. Learning in Cycle II was similar to learning in Cycle I, but the results from Cycle II significantly improved compared to Cycle I. At the first meeting of Cycle II, the teacher's activities achieved an overall score of 13 with a maximum score of 16, representing 81.25%, and were categorized as adequate. Meanwhile, the student's activities achieved an overall score of 11 with a maximum score of 16, representing 68.75%, and were categorized as poor.

At the second meeting, the teacher's activities achieved an overall score of 15 with a maximum score of 16, representing 93.75%, and were categorized as very satisfactory. Meanwhile, the student's activities achieved an overall score of 15 with a maximum score of 16, representing 93.75%, and were categorized as very satisfactory. At the third meeting, the analysis of student learning outcomes, which utilized the time-based learning model with media boxes in Cycle II, showed significant improvement, achieving an average score of 77.62%, categorized as satisfactory.

Table 3. Student Learning Outcomes in Cycle II

No	Category	Interval	Frequency	Score Weight	% Students	Average
1	Very Good	80-100	14	1.178	51,85	77,62% Enough Category
2	Good	66-79	10	733	37,03	
3	Fair	56-65	3	185	11,11	
4	Poor	40-55	-	-	-	
5	Failure	30-39	-	-	-	
	Total		27	2.096	100%	

Table 3 above shows that the average student learning outcomes improved significantly compared to Cycle I. Twenty-four students achieved the minimum competency standard, and three students did not in Cycle II.

Reflection

Cycle II demonstrated improvements in learning implementation compared to Cycle I. Students appeared more active and enthusiastic and understood the material better. The use of media boxes was also more effective in supporting the learning process.

Teachers were able to manage the class better and provide guidance according to student needs. Student learning outcomes showed improvement, with the majority of students achieving the minimum competency standard. This indicates that the improvements made in Cycle II were effective in enhancing the quality of learning. This improvement can be seen in the graph showing the percentage of student learning outcomes completed below in Figure 2.

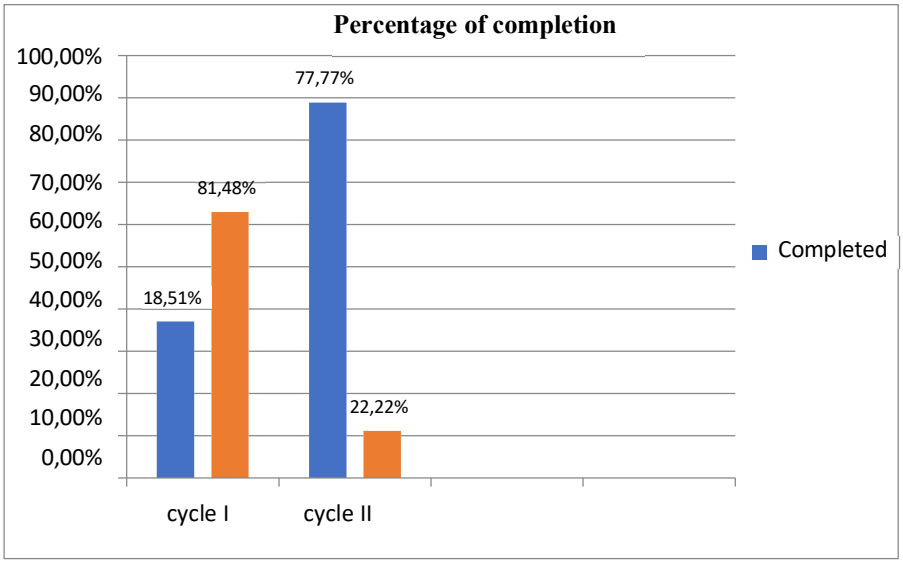

Figure 2. Graph of Percentage of Learning Outcomes Completion

A significant increase in student learning outcomes in cycle I and cycle II is clearly visible; the percentage of students completing learning outcomes in cycle I shows that most have not reached the minimum criteria. However, after learning improvements were made in cycle II through the application of the time-based learning model assisted by media boxes, there was a very significant increase; completion reached 77.62% with a "Good" category. Therefore, it can be concluded that the application of the cooperative learning model of the time-based learning type assisted by media boxes can improve the learning outcomes of class V students of elementary school 108 Moncongloe Home Base.

Discussion

This study investigates the implementation of a time-based cooperative learning paradigm, facilitated by media boxes, to enhance the social studies learning outcomes of elementary school students. This study employed the Kemmis and McTaggart research paradigm, an evolution of Kurt Lewin's approach. The Kemmis and McTaggart Collaborative Action Research model comprises several phases.

In Cycle I, the observation phase encompasses both instructor and student observations. Observations are performed by indicating (✓) when the criteria are satisfied. This technique is conducted at every meeting, and 16 indicators are monitored within the time-based learning model. During the initial meeting of cycle I, the

aggregate score for teacher activity was 9 out of a possible 16, resulting in a percentage of 56.25%, which is classified as undesirable. Simultaneously, the aggregate student activity score was 7 out of a maximum of 16, indicating that 43.75% of the pupils were classified as "poor."

During the second meeting, the aggregate teacher activity score was 11 out of a possible 16, indicating 68.75% of the pupils fell into the "poor" category. Simultaneously, the aggregate student activity score was 10 out of a possible 16, indicating that 62.5% of the kids were classified as "poor." During the third meeting, the evaluation of student learning outcomes utilizing the time-based learning model, supplemented with media boxes in cycle I, yielded an average score of 56.14%, indicating a "sufficient" level of achievement. Furthermore, the student learning outcomes statistics for Cycle I indicate that only 10 students attained the requisite proficiency, whereas 17 students did not. This suggests that the learning paradigm employed in Cycle I was not entirely successful in enhancing student learning results. Cycle II enhanced the educational process as more pupils required further support.

Throughout the Cycle I reflection phase, numerous students exhibited diminished engagement in the learning process and demonstrated a lack of confidence in articulating their ideas and responses. Moreover, during collaborative learning, certain students showed reluctance to engage with their peers, and the media box utilized included inadequate and unengaging content. As a result, numerous students continued to grapple with comprehending the material offered. The students' lack of comprehension was attributed to the implementation of the new time-based learning approach. Consequently, the educator required enhancement of the learning process in Cycle II.

Cycle II had three meetings, including a test. Cycle II learning was comparable to Cycle I, but the results were far better. At Cycle II's first meeting, the teacher's activities scored 13 with a maximum of 16, reflecting 81.25%, and were deemed adequate. The student's activities scored 11 out of 16 (68.75%), which was poor.

In the second meeting, the teacher's activities scored 15 with a maximum of 16, or 93.75%, and were deemed extremely satisfactory. While the student's activities scored 15 with a maximum of 16, reflecting 93.75%, they were rated as very satisfactory. The time-based learning model with media boxes in Cycle II improved student learning results at the third meeting, averaging 77.62%, which was satisfactory.

Cycle II improved learning implementation over Cycle I. The students were more engaged and comprehended the topic. More effective learning support came from media boxes. Teachers managed classes well and guided students. Most pupils met the basic proficiency criterion, improving learning outcomes. This shows that Cycle II enhancements improved learning.

A considerable rise in student learning outcomes in cycle I and cycle II is seen; most cycle I students do not meet the minimum criteria. However, cycle II learning enhancements using the time-based learning model and media boxes increased completion to 77.62% with a "Good" rating. Thus, the cooperative learning model of the time-based learning type with media boxes can increase class V students' learning

results at elementary school 108 Moncongloe Home Base. Time-based learning (TBL) lets students practice individual and team problem-solving (Swanson, 2019; Sterpu, 2024). This format helps them grasp and apply theory to problems (Dearnley et al., 2018; Alizadeh et al., 2024). Therefore, researchers used the Time-Based Learning (TBL) model with media boxes. A media box holds learning materials to grab students' attention (Wulandari, 2024; Aminah & Yusnaldi, 2024). Media boxes boost learning quality, outcomes, and student engagement and interest (Hardiansyah & Wahdian, 2023; Hilyana & Ermawati, 2024). Media boxes make learning more fun and intriguing. Students will be more active and grasp learning better (Khairunnisa & Wulandari, 2025).

4. CONCLUSION

The research findings show that the implementation of the time-based cooperative learning model with the aid of media boxes can improve student learning outcomes in fifth-grade science lessons at elementary school 108 Moncongloe Home Base. The improvement is evidenced by the scores of teacher and student learning activities, as well as student learning outcomes. In Cycle I, teacher activities were still in the poor category, while student learning activities were still in the poor category and had not yet achieved completion. In Cycle II, teacher and student observation results improved to a very good category. The analysis of student learning outcomes indicates a significant increase, demonstrated by the rise in the average score from Cycle I at 56.14% (sufficient category) to 77.62% in Cycle II (good category).

As a suggestion, teachers can apply the cooperative learning model of the time-based learning type assisted by the media box to improve the learning outcomes of elementary school students in science. This research can help improve the quality of learning in elementary schools by emphasizing the importance of cooperative learning models and effective learning media. Further research can be conducted to develop cooperative learning models for other subjects in elementary schools. Additionally, further research can be conducted to create more effective tools for measuring student learning outcomes after implementing the time-based cooperative learning model supported by the media box.

REFERENCES

Afni, N. (2020). Penerapan Model Problem Based Learning (PBL) Di Sekolah Dasar. In *Social, Humanities, and Educational Studies (SHES): Conference Series* (Vol. 3, No. 4, pp. 1000-1004). https://doi.org/10.20961/shes.v3i4.55667

Alizadeh, M., Masoomi, R., Mafinejad, M. K., Parmelee, D., Khalaf, R. J., & Norouzi, A. (2024). Team-based learning in health professions education: an umbrella review. *BMC Medical Education*, *24*(1), 1131. https://doi.org/10.1186/s12909-024-06147-x

Aminah, S., & Yusnaldi, E. (2024). Pengembangan Media Smart box Untuk Meningkatkan Hasil Belajar Siswa Pada Mata Pelajaran Ilmu Pengetahuan Sosial di Madrasah

Ibtidaiyah. *Didaktika: Jurnal Kependidikan*, *13*(3), 3077-3086. https://doi.org/10.58230/27454312.778

Apriana, D. G., & Budiarti, M. (2025). Upaya Meningkatkan Hasil Belajar IPAS Siswa Kelas V Materi Bencana Alam Melalui Model PBL Berbantuan Media Smart Box Di SDN Gulun 01 Magetan. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *10*(03), 345-357. https://doi.org/10.23969/jp.v10i03.30716

Arbie, A., Satri, P. S. F., Setiawan, D. G. E., Nuayi, A. W., & Buhungo, T. J. (2021). Pengembangan perangkat pembelajaran team based learning-problem solving berbantuan whatsapp dan zoom meeting pada pembelajaran daring. *ORBITA: Jurnal Pendidikan dan Ilmu Fisika*, *7*(2), 394-399. https://doi.org/10.31764/orbita.v7i2.5519

Burgess, A., Haq, I., Bleasel, J., Roberts, C., Garsia, R., Randal, N., & Mellis, C. (2019). Team-based learning (TBL): a community of practice. *BMC medical education*, *19*(1), 369. https://doi.org/10.1186/s12909-019-1795-4

Burgess, A., Kalman, E., Haq, I., Leaver, A., Roberts, C., & Bleasel, J. (2020). Interprofessional team-based learning (TBL): how do students engage?. *BMC medical education*, *20*(1), 118. https://doi.org/10.1186/s12909-020-02024-5

Carpenter, R. E., Silberman, D., & Takemoto, J. K. (2022). The student engagement effect of team-based learning on student pharmacists. *American Journal of Pharmaceutical Education*, *86*(5), 8567. https://doi.org/10.5688/ajpe8567

Darling-Hammond, L., Schachner, A. C., Wojcikiewicz, S. K., & Flook, L. (2024). Educating teachers to enact the science of learning and development. *Applied Developmental Science*, *28*(1), 1-21. https://doi.org/10.1080/10888691.2022.2130506

Davis, E. A. (2021). Commentary: Instructional materials supporting teachers' professional learning. *Journal of Science Teacher Education*, *32*(7), 836-841. https://doi.org/10.1080/1046560X.2021.1915606

Dearnley, C., Rhodes, C., Roberts, P., Williams, P., & Prenton, S. (2018). Team based learning in nursing and midwifery higher education; a systematic review of the evidence for change. *Nurse Education Today*, *60*, 75-83. https://doi.org/10.1016/j.nedt.2017.09.012

Espey, M. (2018). Enhancing critical thinking using team-based learning. *Higher Education Research & Development*, *37*(1), 15-29. https://doi.org/10.1080/07294360.2017.1344196

Hamzah, R. A., & Irviana, I. (2022). Merdeka Belajar Yang Tercermin Dalam Kompetensi Profesional Guru Kelas Tinggi Di Upt Spf Sdn Kip Maccini Kota Makassar. *Jurnal Pendidikan Dasar*, *10*(2), 202–218. https://doi.org/10.46368/jpd.v10i2.883

Hardiansyah, F., & Wahdian, A. (2023). Improving Science Learning Outcomes Through the Development of the Magic Card Box Learning Media. *Al-Ishlah: Jurnal Pendidikan*, *15*(1), 823-833. https://doi.org/10.35445/alishlah.v15i1.2711

Hilyana, F. S., & Ermawati, D. (2024). Peningkatan Hasil Belajar IPAS Menggunakan Model Inkuiri Berbantuan Media Smart Box Kelas IV SD. *Future Academia: The Journal of Multidisciplinary Research on Scientific and Advanced*, *2*(3), 307-314. https://doi.org/10.61579/future.v2i3.181

Irviana, I., Ilham, D., & Kaso, N. (2020). Pengaruh Strategi Pemecahan Masalah terhadap Hasil Belajar Matematika Siswa Kelas V MIS Nurul Hidayah Kabupaten Bombana. *Jurnal Konsepsi*, *8*(4), 184-193. https://www.p3i.my.id/index.php/konsepsi/article/view/189

Jabbar, H. A., Jarrahi, A. H., Vamegh, M. H., Moh'd Alhabahbeh, D. A., Mahmoud, N. A., & Eladl, M. A. (2018). Effectiveness of the team-based learning (TBL) strategy on

medical students' performance. *Journal of Taibah University Medical Sciences*, *13*(1), 70-76. https://doi.org/10.1016/j.jtumed.2017.09.003

Kemmis, S., McTaggart, R., & Nixon, R. (2013). Introducing critical participatory action research. *The action research planner: Doing critical participatory action research*, 1-31.

Khairunnisa, F., & Wulandari, D. (2025). Development of smart box learning media on earth layers material to improve student learning outcomes. *Jurnal Penelitian Pendidikan IPA*, *11*(2), 388-397. https://jppipa.unram.ac.id/index.php/jppipa/article/view/10642

Lin, C. Y., & Lin, C. C. (2023). Reflecting on Integrating Team-Based Learning into Project-Based Practical Courses to Enhance Social-Emotional Learning. In *International Conference on Frontier Computing* (pp. 261-271). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-99-9416-8_43

Michaelsen, L. K., & Sweet, M. (2023). Fundamental principles and practices of team-based learning. In *Team-based learning for health professions education* (pp. 9-34). Routledge.

Mulyadi, M., Nur Syam, & Fitriyani Yahya. (2021). Pengaruh Penggunaan Media Pembelajaran ICT terhadap Hasil Belajar IPA Kelas V di SD Lanraki II Makassar. *AIJER: Algazali International Journal Of Educational Research*, *4*(1), 43–54. https://doi.org/10.59638/aijer.v4i1.335

Odell, K. E. (2018). Team-based learning and student performance: Preliminary evidence from a principles of macroeconomics classroom. *International Review of Economics Education*, *29*, 44-58. https://doi.org/10.1016/j.iree.2018.01.001

Parrish, C. W., Guffey, S. K., & Williams, D. S. (2023). The impact of team-based learning on students' perceptions of classroom community. *Active Learning in Higher Education*, *24*(2), 169-183. https://doi.org/10.1177/14697874211035078

Ping, C., Schellings, G., & Beijaard, D. (2018). Teacher educators' professional learning: A literature review. *Teaching and teacher education*, *75*, 93-104. https://doi.org/10.1016/j.tate.2018.06.003

Rissanen, I., Kuusisto, E., Tuominen, M., & Tirri, K. (2019). In search of a growth mindset pedagogy: A case study of one teacher's classroom practices in a Finnish elementary school. *Teaching and teacher education*, *77*, 204-213. https://doi.org/10.1016/j.tate.2018.10.002

Roossien, L., Boerboom, T. B., Spaai, G. W., & de Vos, R. (2022). Team-based learning (TBL): Each phase matters! An empirical study to explore the importance of each phase of TBL. *Medical teacher*, *44*(10), 1125-1132. https://doi.org/10.1080/0142159X.2022.2064736

Rotgans, J. I., Rajalingam, P., Ferenczi, M. A., & Low-Beer, N. (2019). A students' model of team-based learning. *Health Professions Education*, *5*(4), 294-302. https://doi.org/10.1016/j.hpe.2018.10.003

Ruder, P., Maier, M. H., & Simkins, S. P. (2021). Getting started with team-based learning (TBL): An introduction. *The Journal of economic educaTion*, *52*(3), 220-230. https://doi.org/10.1080/00220485.2021.1925187

Schleicher, A. (2018). Educating learners for their future, not our past. *ECNU Review of Education*, *1*(1), 58-75. https://doi.org/10.30926/ecnuroe2018010104

Spiller, M. (2022). Team-Based Learning in an Art and Design First-Year Studio Class. *Transformative Dialogues: Teaching and Learning Journal*, *15*(2). https://doi.org/10.26209/td2022vol15iss21497

Sterpu, I., Herling, L., Nordquist, J., Rotgans, J., & Acharya, G. (2024). Team-based learning (TBL) in clinical disciplines for undergraduate medical students—a scoping

review. *BMC Medical Education*, *24*(1), 18. https://doi.org/10.1186/s12909-023-04975-x

Sudarto, S., Amin, M., & Suriana, S. (2024). Pengaruh Media Smart Box Terhadap Hasil Belajar Ipas Peserta Didik Kelas IV Sd Negeri 216 Talungeng. *Jurnal Pendidikan Dasar dan Sosial Humaniora*, *3*(10), 757-764. https://mail.bajangjournal.com/index.php/JPDSH/article/view/8423

Swanson, E., McCulley, L. V., Osman, D. J., Scammacca Lewis, N., & Solis, M. (2019). The effect of team-based learning on content knowledge: A meta-analysis. *Active learning in higher education*, *20*(1), 39-50. https://doi.org/10.1177/1469787417731201

Wulandari, D. (2024). Smart Box Learning Media Based on Problem Based Learning to Improve Science Environmental Learning Outcomes. *Jurnal Penelitian Pendidikan IPA*, *10*(6), 3141-3151. https://jppipa.unram.ac.id/index.php/jppipa/article/view/7244

Yuretich, R. F., & Kanner, L. C. (2015). Examining the effectiveness of team-based learning (TBL) in different classroom settings. *Journal of Geoscience education*, *63*(2), 147-156. https://doi.org/10.5408/13-109.1

Zolfagharı, A. (2015). The necessity and importance of education for social and cultural development of societies in developing countries. *Cumhuriyet Üniversitesi Fen Edebiyat Fakültesi Fen Bilimleri Dergisi*, *36*(3), 3380-3386. https://dergipark.org.tr/en/download/article-file/714131