Inovasi Kurikulum

https://ejournal.upi.edu/index.php/JIK

The contribution of project-based Learning to improve basic literacy at junior high school

Elisabet Janul[1], Dadang Sunendar[2]
[1,2]Universitas Pendidikan Indonesia, Bandung, Indonesia
elisabetjanul159@upi.edu[1], dadangsunendar@upi.edu[2]

ABSTRACT

Collaboration is one of the skills needed in the 21st century. Santa Angela Middle School responded to this demand by designing a collaborative project between subjects. This research aims to analyze the contribution of collaboration projects between subjects to developing students' literacy skills. Based on the results of observations and interviews, the collaborative learning model has a major contribution to the development and mastery of students' basic literacy. This is possible because students can learn several subjects in the collaboration model between students in one project. This approach pattern allows students to be trained to analyze, understand, and find solutions to every problem encountered in everyday life. Collaborative projects provide opportunities for students to collaborate with peers. This research uses a descriptive method with a qualitative approach. This research shows that collaborative projects between subjects contribute to students' literacy skills. Through collaborative learning activities between subjects of various types, students' basic literacy skills experience significant changes and improvements. This happens because, in the collaborative learning process between subjects, students must have more reading comprehension by looking for important information related to the discussed topic.

ABSTRAK

Kolaborasi merupakan salah satu keterampilan yang dibutuhkan diabad 21. Sekolah Santa Angela menjawab kebutuhan ini dengan mendesain proyek kolaborasi antar mata pelajaran. Penelitian ini bertujuan menganalisis kontribusi proyek kolaborasi antar mata pelajaran terhadap pengembangan kemampuan literasi peserta didik. Berdasarkan hasil observasi dan wawancara model pembelajaran kolaborasi memiliki kontribusi yang besar terhadap perkembangan dan penguasaan literasi dasar peserta didik. Hal ini dimungkinkan karena dalam model kolaborasi antar mata pelajaran, peserta didik dapat belajar beberapa mata pelajaran dalam satu proyek. Pola pendekatan ini memungkinkan peserta didik dilatih untuk menganalisis, memahami dan menemukan solusi dari setiap persoalan ditemukan dalam kehidupan sehari-hari. Proyek kolaborasi memberi kesempatan kepada peserta didik untuk menjalin kerja sama dengan teman sebaya. Penelitian ini menggunakan metode deskriptif dengan pendekatan kualitatif. Hasil dari penelitian ini menunjukkan bahwa proyek kolaborasi antar mata pelajaran memberi kontribusi terhadap kemampuan literasi peserta didik. Melalui kegiatan pembelajaran kolaborasi antara mata pelajaran berbagai jenis kemampuan literasi dasar peserta didik mengalami perubahan dan peningkatan yang cukup signifikan. Hal ini terjadi karena dalam proses pembelajaran kolaborasi antar mata pelajaran peserta didik dituntut untuk lebih banyak membaca pemahaman dengan mencari informasi-informasi penting yang berkaitan dengan topik yang dibahas.

Kata Kunci: literasi; pembelajaran berbasis proyek; pembelajaran kolaborasi

INTRODUCTION

Literacy is the gateway to a bright future. An individual will have a prosperous life if they have literacy skills as one of the key skills in human life. Literacy skills are able to develop their potential, understand information critically and wisely, engage in social, economic, and political life, and improve the quality of life, as well as establish harmonious relationships in living together at the community and nation level and the global level. Literacy skills are a strong foundation to help learners play a role in society, which requires critical thinking skills in filtering information wisely and politely in the current era (Oktariani & Ekadiansyah, 2020). Literacy learning is a preparation to face the future with confidence (Becerra-Posada *et al.*, 2022).

Learners must be prepared with good literacy skills before learning other more complicated and challenging areas of life. Good learners' literacy skills are generally characterized by their ability to solve problems, express creative ideas to build communicative discussions, defend opinions, dare to try new things, and be critical and selective in choosing and sorting out information. A person's literacy skills are acquired through education, both education in the family and formal education in schools. There are two factors that support an individual's literacy skills, namely internal factors such as learner intelligence, interest, and learning motivation. As well as external factors such as lack of parental support, peer influence, infrastructure, and teachers' ability to utilize technological facilities that are the demands of learning in the 21st century.

Referring to the 2022 PISA results, Indonesia's ranking rose 5-6 positions compared to 2018 based on Kemendikbudristek 2023 PISA Results Report but is still classified as being at a low level in almost all aspects of basic literacy: literacy in reading, writing, numeracy, science, digital, financial, cultural and civic literacy. This certainly provides challenges and opportunities for the government and society to examine learning models that are appropriate to the conditions of Indonesian children and to support the development of a strong and resilient national character (Fahlevi, 2022). One factor that is the reason why Indonesian literacy is still low is the selection of learning models that are not appropriate and in accordance with conditions and needs. The low level of basic literacy skills possessed by students in SMP is partly because teachers have not maximized learning models that are suitable for the conditions of students because the learning models used by teachers are still conventional and learning is still teacher-centered.

Based on the results of observations and interviews with several teachers at SMP Santa Angela, the basic literacy skills of students in this school are in the high category based on the results of the Asesmen Nasional (AN) in the last two years. Inter-subject collaboration project model learning is one of the factors that contribute to improving learners' literacy skills. In the inter-subject collaboration project, learners are trained to master several literacy skills simultaneously by providing learning tools and components across subject areas. Applying the inter-subject collaboration project learning model gives learners the freedom to work together in groups, share ideas and learn from each other. This reveals the importance of active and social engagement in the learning process. In addition, cross-subject collaboration encourages the development of social skills needed in everyday life, such as the ability to communicate, collaborate and solve problems together.

Project-based inter-subject collaboration learning trains 21st-century skills, builds teamwork, and learns related to the context of students' daily lives (Mayasari *et al.*, 2016). Collaborative projects between subjects have the advantage of helping learners design the process of determining a result, training learners to be responsible for managing information carried out on a project, which is then presented in class (Kristanti & Subiki, 2017). The advantages of project-based learning models can increase students'

creativity, improve critical thinking skills, and improve students' social and collaborative skills (Nuraini, 2023; Susanti *et al.,* 2024).

Referring to the results of previous research, it can be illustrated that there is a close relationship between the selection of learning models and the development of learning abilities and student achievement. This encourages the author to conduct research related to the application of innovative, creative and contextual learning models to the development of learners' knowledge, attitudes and skills, especially in basic literacy studies. The learning model developed at this research location is an inter-subject collaboration project to improve learners' basic literacy skills by conducting a project where learners learn various skills that are needed in the future. All the advantages described were found in the learning process at Santa Angela school, thus encouraging researchers to examine the contribution of inter-subject collaboration projects to basic literacy skills, especially those that occur at Santa Angela school.

LITERATURE REVIEW

The Nature of 21st Century Learning and Kurikulum Merdeka Paradigm

Various types of skills must be possessed by students in the 21st century in order to be able to compete at the national and international levels. To answer these challenges, the government of Indonesia has reformed the education system by making policy changes to the implementation of the Kurikulum Merdeka. One of the important components in implementing the Kurikulum Merdeka is basic literacy, which is a basic ability that must be possessed by every individual. There are six types of basic literacy that must be mastered, namely reading and writing literacy, numeracy literacy, science literacy, financial literacy, digital literacy, and cultural and civic literacy; this policy change is one of the answers for educators to prepare students to be ready to face the eternal challenges of the 21st century. In the Kurikulum Merdeka, schools are given the freedom and independence to provide learning projects that are close to the daily lives of students.

Effective learning models should be able to integrate collaboration, technology and interactive elements to achieve optimal learning objectives. The application of project-based learning models is a priority to be applied in the current learning process. By applying the project-based learning model, students' character development is formed and trained in accordance with the Profil Pelajar Pancasila as stated in Dewayani in "*Seri manual GLS: literasi dalam pembelajaran berbasis proyek untuk meningkatkan kecakapan abad XXI*". Project-based learning can also be used as a decisive instrument in maintaining and improving learners' social and emotional abilities in the era of ubiquitous digitalization (Fitzgerald, 2020; Culclasure *et al.*, 2019).

In addition to the project-shaped collaborative learning model, there is one more skill that students must master, namely collaboration skills. The predecessors of the Indonesian nation have introduced the spirit of collaboration with a form of activity that still exists today: the activity of gotong royong. The spirit of gotong royong is one of the basic foundations for the formation of the Proyek Penguatan Profil Pelajar Pancasila (P5), which, in its application, requires that students learn to work together with many parties in different scopes. To realize the big dream of creating a smart and skilled Indonesian generation while upholding the values of Pancasila, the Government of Indonesia continues to strive to implement a learning model that allows students to be trained and guided to learn in a spirit of brotherhood and unity, given the characteristics of a geographically diverse nation as well as culturally, ethnically, religiously and racially.

With a project-based learning model, students are increasingly trained to work together in teams and realize their respective roles in working on projects while still appreciating and respecting the uniqueness of each individual.

Literacy as a Parameter for Educational Success

The rapid development of information technology makes humans need various basic skills to be able to compete with other nations. Mastery of basic literacy is a must today. In the development of the Kurikulum Merdeka, literacy has a major place in the entire learning process to improve the quality of the nation's education. Literacy skills are fundamental for students to have in facing the global era to be able to meet life needs in various situations (Artini & Wijaya, 2020).

According to Beers et al in the book "*A Principal's Guide to Literacy Instruction*" a culture of literacy needs to be built and developed in schools. Schools with a literacy-friendly environment, social relations and affection will develop optimally, thus forming a literacy-savvy academic environment (Priyono *et al.*, 2022). Literacy is a means for learners to recognize, understand and apply the knowledge gained at school.Literacy is also related to students' lives, both at home and in the surrounding environment (Lailiyah, 2021). A literacy-friendly school environment will support students to master the six basic literacies and implement them in their daily lives.

The World Economic Forum 2015 established six basic literacies that must be mastered by the world community and become one of the skills needed in the 21st century. The six basic literacies are 1) reading and writing literacy, 2) numeracy literacy, 3) science literacy, 4) financial literacy, 5) digital literacy, 6) cultural and civic literacy (Novarina *et al.*, 2019). These six literacy skills must be possessed by every individual in order to achieve success and success in life.Activities at school will have an impact on students' literacy if principals, teachers and librarians work together to implement literacy activities at school (Cahya *et al.,* 2020). Literacy culture has a very important role in improving students' critical thinking skills. The higher the literacy skills of students, the higher the level of criticality of these students (Rohman, 2022).

Contextual Learning Model

The learning model is one of the supporting factors in the education system. Choosing the right learning model can improve students' learning abilities and achievements. Teachers have an important role in determining and establishing learning models to achieve holistic educational goals. The contextual learning model is a holistic learning process and aims to help learners to understand the meaning of teaching material and relate it to the context of their daily lives. The model underlines learners' understanding, learning outcomes, learning motivation, learning attitudes, experiences, and tendency to think critically (Rohmah *et al.*, 2023). Contextual learning encourages learners to organize and connect the context of learners' daily lives when learning (Winarso & Haqq, 2020). With this concept, learning outcomes are expected to be more meaningful for students. The learning process takes place naturally in the form of learner activities of working and experiencing, not transferring knowledge from teacher to learner; learning strategies are more important than results.

Model Project Based Learning (PBL)

The PBL model is one of the important components in determining success in the learning process. Teachers are the spearhead of change in the field of education. The implementation of the Kurikulum Merdeka provides flexibility for teachers to design learning models that are in accordance with the

810

characteristics of students. The PBL model is one of the models recommended for implementation in the Kurikulum Merdeka. This model provides many opportunities for teachers to develop classroom learning patterns that give students many opportunities to collaborate with others (Ali & Hasan, 2022; Habash *et al.*, 2022).

In addition, the PBL model requires learners to reflect on learning outcomes, which allows them to practice developing metacognitive skills (Issa & Khataibeh, 2021). PBL improves students' skills needed to face the global community and is seen as an approach to creating a learning environment that can encourage students to construct knowledge and skills personally, which emphasizes contextual learning through complex activities (Setiyaningsih & Subrata, 2023). The foundation of PBL is the belief and appreciation that learners are able to learn independently in solving complex problems encountered in the process in everyday life (Maros *et al.*, 2023).

Projects can reduce competition in the classroom and encourage learners to work together rather than alone (Ozkan, 2023). PBL is a learning management process that encourages learners to take action and engage in every step of learning, from exploration, learning planning, learning design, knowledge creation and application, and evaluation, as well as being learner-centered and creating a fun and enjoyable classroom atmosphere (Wanglang & Chatwattana, 2023; Sisamud *et al.,* 2023).

Inter-subject Collaborative Learning Model

In the application of a project-based learning model, it can be applied by combining two or more subjects in one particular project. Collaborative projects between subjects in the current era are very intensively carried out in every school. With the introduction of the Kurikulum Merdeka, all teachers are required to be able to collaborate between subjects to design student learning activities. The goal is to make learning more focused on effective and efficient learning experiences.

Inter-subject project-based learning is able to teach various strategies to achieve 21st-century success, help learners develop 21st-century skills, increase responsibility, and practice problem-solving, communication and creativity. The inter-subject collaborative learning type starts the activity with mapping problems that occur in everyday life with the help of questions given by the teacher (Hizqiyah *et al.*, 2023). The application of this model is one of the five indicators of social behavior, namely responsibility, caring for others, being open, and creativity (Pertiwi *et al.*, 2023).

Collaborative learning between subjects trains learners' skills to analyze the relationship between one subject and another in one type of learning activity. Collaborative learning means learning that uses social interaction as a means of building knowledge. Collaborative learning can happen at any time, not necessarily at school; for example, a group of learners helping each other with homework. Collaborative learning can take place between learners in different classes or from different schools. Collaborative learning can be informal, does not have to take place in the classroom, and learning does not need to be strictly measured.

To achieve these goals, cooperation between all parties is needed, including cooperation between subject teachers of both cognate and different subjects. Through collaboration in learning, teachers can strengthen each other's knowledge, understanding, and skills in understanding and applying the concepts of a subject to a subject in an inter-subject collaboration project.

Teacher's Role in Designing Inter-subject Collaboration Projects

In collaborative learning, the roles of teachers and learners are intertwined. The teacher should be a guide for the learners, explaining the learning objectives and organizing the schedule and details of the activities that the learners should follow. Secondly, the teacher should explain the use of roles within the group of learners. Group members have an important role, guiding hesitant learners and helping them become more participative to get a more complete and satisfying group result. In collaborative learning, there is effective interpersonal communication where group members keep communicating with each other, which is quite clear and directed. So the teacher must be skillful in combining collaborative activities that can be done by learners (Sarah & Witarsa, 2023).

Literacy Integration in Collaborative Learning between Subjects

Collaboration skills between students will have an impact on the implementation of learning with the PBL model. In the application of this model, in addition to developing skills to work together, there is a transfer of knowledge through intense interaction between one another. In addition to knowledge, various practical information will indirectly be shared with each other, and this will improve the mental abilities of learners. A collaborative approach implemented in every subject will improve students' ability to learn (Wiartis, 2021). Collaborative projects between subjects become a means of developing learning components across subjects and will support learners to master several literacy skills simultaneously (A'yun 2021).

METHODS

This research uses descriptive qualitative research to discuss the contribution of inter-subject collaboration projects to the literacy skills of junior high school students. This research describes and formulates various conditions and situations based on information obtained through observations and interviews related to the problems studied and those that occur in the field with the theme of the collaboration project "Ide Kreatif Permainan Tradisional Baru dengan Konsep Metaverse". This research is designed to obtain data on the role of the inter-subject collaboration project learning model on students' basic literacy skills.

This research was conducted in July-September 2023 at SMP Santa Angela Bandung. The subjects of this study were ninth grade. There are five ninth grade classes in SMP Santa Angela, with the ability of students in each class having the same level. Therefore, this research sample was taken randomly, or random sampling. Based on interviews with the curriculum team and the homeroom teacher of class ninth grade, class ninth grade C was selected as the sample in this study. Class ninth grade C consisted of 30 people; 14 boys and 16 girls with an age range of around 14-15 years. This research procedure begins with determining the subject matter and then conducting research with observation, interviews and documentation. The next step is to process and analyze the data that has been obtained. The researcher became the main instrument, assisted by observation guidelines, interview guidelines, and documentation guidelines made by the researcher. In the observation stage, the researcher observed the application of the inter-subject collaboration project learning model. In the interview stage, the researcher asked for opinions and ideas related to the implementation of PBL collaboration between subjects and teachers of related subjects. In the documentation stage, researchers obtained data from the previous two years' activities in the form of written works with different themes in each project, documentation of collaboration activities, and documentation of students' work products in the form of written works and slides.

812

The data collected was analyzed using the qualitative techniques of the interactive model. At the data condensation stage, the data obtained was accommodated thoroughly without reducing the field findings obtained during the research. At the presentation stage, the data is presented in the form of narrative text by describing and narrating a set of information that has been obtained from the condensation results in the form of new game names from each group. Then the verification and conclusion-drawing stages are carried out continuously, meaning repeatedly from data condensation, data presentation, and conclusion drawing so that the conclusions can be seen clearly in meaning and regularity. Data validity in this study uses triangulation of sources and techniques. Source triangulation is done by validating data obtained from schools, curriculum coordinators, teachers, and students. The triangulation technique is done by validating the data obtained from interviews, observations and documentation for the same data source.

RESULTS AND DISCUSSION

Based on the process described above, it is found that literacy skills have an important influence on a person's success. Good literacy skills will help a person in understanding information, both oral and written. In life, mastery of literacy is very important in supporting competencies (Oktariani & Ekadiansyah, 2020). There are six basic literacies that need to be mastered by students that have been determined by the OECD in 2015, namely literacy in reading and writing, numeracy, science, digital, financial, and culture and citizenship. These six basic literacies are needed by humans in their survival, such as reading literacy, which has a positive impact on improving students' academic scores (Hardiyanti, 2022).

The results of observations on inter-subject collaboration PBL activities in mathematics, social studies, Sundanese and Indonesian subjects in class ninth grade of SMP Santa Angela show that the implementation of inter-subject collaboration project learning activities improves learners' basic literacy skills. The learning that took place every Friday, starting from July 28, 2023, to September 22, 2023, challenged learners to use various means of information in generating creative ideas for new traditional games with the concept of metaverse. The new traditional game is an amalgamation of various traditional games in Indonesia. In the first stage, learners find one known traditional game. In the second stage, learners are divided into groups of 5 people each. In the group, learners share the responsibility to explore information about the traditional game of the group's choice (Sufajar & Qosyim, 2022).

The third stage of the group determines the name of the new game that characterizes the group. The names of the new games developed in class ninth grade C are as follows: Crebo's Games Show, Dum Dung Tak, The Thieves of Spices, BOTO, and Across The Cultureverse. These new games have their game rules with philosophical values contained in them. One of the results of this collaboration is a new game called Crebo's Games Show. This game is the creation of one of the groups, which is an amalgamation of the traditional games Congklak, Rangku Alu, Engklek, Bekel, and Oray-Orayan. These games are taken from traditional games spread throughout Indonesia, including: Oray-orayan from West Java, Bekel from East Java, and Rangku Alu from NTT. The name Crebo is an amalgamation of the first letters of all the traditional games chosen by the group members and also represents the character of the group members, who are characterized by having curly hair.

Crebo's game techniques are stage games and group games. The players will play three games in a row with different levels of difficulty, from the easiest to the most difficult. The first stage is 'Lelipi', which is adapted from 'oray-orayan', the second stage is 'Becon', which is a combination of Bekel and Congklak, and the third stage is "Heaven Hop", which is adapted from Rangku Alu and Engklek. Each team member will play the 3 stage games individually, but the final points are an accumulation of all points earned by each group member. The transaction used in this game is points or 'rebo'. Players must work hard to earn rebo. Rebo is used to get accessories or clothes according to the desired character. This gives a moral message that to get something you want, each individual needs to work hard and never give up.

The example of the new traditional game above shows that the cross-subject collaboration project trains learners to understand the six basic literacies that are the main focus of the Kurikulum Merdeka; literacy in reading and writing, numeracy, science, digital, financial, and culture and citizenship. The most dominant literacy used in this project is digital literacy. Digital literacy development is a means to support contextual learning to foster interest in learning and encourage learners to make connections between the knowledge they have and the application in their daily lives (Rahmatullah *et al.*, 2021). In addition, collaborative project activities between subjects help students learn to analyze each problem wisely (Rodliyah & Fadly, 2023), and work together in groups (Fauzi *et al.*, 2021). This can be seen from the activities carried out by Santa Angela school students involved in this inter-subject collaboration PBL. Learners discuss and work together and learn new things related to the six basic literacies.

Working on tasks in groups provides many conveniences for students in understanding and analyzing material through discussion activities with group friends (Ahwan & Basuki, 2023). This will make it easier for students to master the material and present the results in front of the class (Sholikah *et al.*, 2023). Thus, indirectly, the six basic literacies are learned and mastered optimally (Dianti *et al.*, 2023) as done by Santa Angela school students involved in collaborative PBL. Traditional games are certainly closely related to the nation's culture. The collaborative project on learners' creative ideas in developing traditional games to be suitable and attractive to young people today is an opportunity for learners to learn to understand the diversity of traditional games, accept the uniqueness of each region, and learn to carry out a reform process so that Indonesian traditional games are well preserved and loved by Indonesian children.

Project-based learning is a very effective method in developing students' creativity. Because learning designed with a project model can be applied at all levels of education from basic education to higher education (Hussein, 2021). Literacy skills are one of the skills needed in today's world. Good literacy skills of citizens will have an impact on the welfare of a nation. The results of the PISA 2023 release show that the Indonesian nation is able to improve basic literacy skills. Commitment, discipline, and hard work from all parties are needed so that Indonesian children grow and develop into a generation that has all the skills needed in this century. The inter-subject collaboration PBL conducted at Santa Angela School shows how students collaborate with each other on the concept of basic literacy as an important thing to learn through the theme of the collaboration project "Ide Kreatif Permainan Tradisional Baru dengan Konsep Metaverse".

CONCLUSION

The inter-subject collaboration project method contributes significantly to learners, especially in Santa Angela School, to develop themselves, such as the ability to master technology and think critically, creatively, and communicatively. By developing a new traditional game creation idea project with the concept of metaverse, learners at Santa Angela School collaborate with peers and work together in teams to overcome complex problems found during the project. In addition, the inter-subject collaboration project is able to improve the six basic literacies for learners, especially for Santa Angela school learners. The inter-subject collaboration project learning model allows learners to learn several subjects in one project. Based on these findings, the inter-subject collaboration project model at Santa Angela School can be used as one of the current learning models. Of course, the results will also accelerate the efforts of the Indonesian people to achieve the targeted PISA score.

AUTHOR'S NOTE

Thank you to all parties who contributed to the writing process of this article.The Basic Education lecturers who continuously support and assist, as well as share their experiences.The researcher hopes that in the future, they will be even better at writing articles.

REFERENCES

Ahwan, M. T. R., & Basuki, S. (2023). Meningkatkan keterampilan kolaborasi siswa melalui aktivitas kebugaran jasmani menggunakan model Project Based Learning (PjBL) SMA Negeri 3 Banjarbaru. *Jurnal Pendidikan Kesehatan Rekreasi, 9*(1), 106-119.

Ali, N. M., & Hasan, K. K. (2022). The effect of using project-based learning on EFL students' achievement. *Journal of Language Studies, 5*(2), 400-412.

Artini, N. P. J., & Wijaya, I. K. W. B. (2020). Strategi pengembangan literasi Kimia bagi siswa SMP. *Jurnal Ilmiah Pendidikan Citra Bakti*, *7*(2), 100-108.

A'yun, Q. (2021). Analisis tingkat literasi digital dan keterampilan kolaborasi siswa dalam pembelajaran IPA kelas VII secara daring. *Jurnal Didaktika Pendidikan Dasar, 5*(1), 271-290.

Becerra-Posada, T., García-Montes, P., Sagre-Barbosa, A., Carcamo-Espitia, M. I., & Herazo-Rivera, J. D. (2022). Project-based learning: The promotion of communicative competence and self-confidence at a State High School in Colombia. *How*, *29*(2), 13-31.

Cahya, W. D., Padmadewi, N. N., & Artini, L. P. (2020). The implementation of independent reading literacy activities in secondary education. *Journal of Education Research and Evaluation, 4*(1), 63-72.

Culclasure, B. T., Longest, K. C., & Terry, T. M. (2019). Project-based learning (PjBL) in three southeastern public schools: Academic, behavioral, and social-emotional outcomes. *Interdisciplinary Journal of Problem-based Learning, 13*(2), 1-31.

Dianti, S. A. T., Pamelasari, S. D., & Hardianti, R. D. (2023). Pendekatan pembelajaran berbasis proyek dengan pendekatan STEM terhadap peningkatan kemampuan literasi sains siswa. *Seminar Nasional IPA, 13*, 432-442.

Fahlevi, M. R. (2022). Kajian project based blended learning sebagai model pembelajaran pasca pandemi dan bentuk implementasi kurikulum merdeka. *Sustainable Jurnal Kajian Mutu Pendidikan*, *5*(2), 230-249.

Fauzi, I. R., Kusdiono, K., & Widiyatmoko, A. (2021). Penerapan model pembelajaran inkuiri terbimbing untuk meningkatkan keterampilan kolaborasi siswa SMP Negeri 22 Semarang. *Seminar Nasional IPA, 13*, 133-141.

Fitzgerald, M. S. (2020). Overlapping opportunities for social-emotional and literacy learning in elementary-grade project-based instruction. *American Journal of Education, 126*(4), 573-601.

Habash, R., Hasan, M., Chiasson, J., & Tannous, M. (2022). Phenomenon-and project-based learning through the lens of sustainability. *International Journal of Education, 38*(1), 1-7.

Hardiyanti, W. M. (2022). Penerapan jurnal pembiasaan literasi membaca di SMP Negeri 1 Mojogedang. *Literasi: Jurnal Bahasa dan Sastra Indonesia serta Pembelajarannya, 6*(2), 268-281.

Hizqiyah, I. Y. N., Nugraha, I., Cartono, C., Ibrahim, Y., Nurlaelah, I., Yanti, M., & Nuraeni, S. (2023). The project-based learning model and its contribution to life skills in biology learning: A systematic literature network analysis. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, *9*(1), 26-35.

Hussein, B. (2021). Addressing collaboration challenges in project-based learning: The student's perspective. *Education Sciences*, *11*(8), 1-20.

Issa, H. B., & Khataibeh, A. (2021). The effect of using project based learning on improving the critical thinking among upper basic students from teachers' perspectives. *Pegem Egitim ve Ogretim Dergisi*, *11*(2), 52-57.

Kristanti, Y. D., & Subiki, S. (2017). Model pembelajaran berbasis proyek (project based learning model) pada Pembelajaran Fisika disma. *Jurnal Pembelajaran Fisika, 5*(2), 122-128.

Lailiyah, I. (2021). Pelaksanaan pembelajaran literasi di SMP Negeri 1 Jember Tahun 2019. *Heritage*, *2*(1), 51-59.

Maros, M., Korenkova, M., Fila, M., Levicky, M., & Schoberova, M. (2023). Project-based learning and its effectiveness: Evidence from Slovakia. *Interactive Learning Environments*, *31*(7), 4147-4155.

Mayasari, T., Kadarohman, A., Rusdiana, D., & Kaniawati, I. (2016). Apakah model pembelajaran problem based learning dan project based learning mampu melatihkan keterampilan abad 21?. *Jurnal Pendidikan Fisika dan Keilmuan (JPFK), 2*(1), 48-55.

Novarina, G. E., Santoso, A., & Furaidah, F. (2019). Model Pelaksanaan Gerakan Literasi Sekolah di Sekolah Dasar. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, *4*(11), 1448-1456.

Nuraini, N. (2023). Implementasi project based learning untuk meningkatkan keterampilan berpikir kreatif mahasiswa dengan lesson study. *Jurnal Pendidikan MIPA*, *13*(4), 996-1004.

Oktariani, O., & Ekadiansyah, E. (2020). Peran literasi dalam pengembangan kemampuan berpikir kritis. *Jurnal Penelitian Pendidikan, Psikologi dan Kesehatan (J-P3K)*, *1*(1), 23-33.

Ozkan, Z. C. (2023). The Effect of project-based learning in visual arts lesson on lesson outcomes and attitudes. *International Journal on Social and Education Sciences*, *5*(2), 367-380.

Pertiwi, N. R., Sabila, H. N., & Sintawati, A. (2023). Implementasi model pembelajaran problem based learning terhadap keterampilan kolaboratif dan komunikasi sains pada materi sistem ekskresi di kelas VIII B SMP Negeri 1 Ciamis. *Bioed: Jurnal Pendidikan Biologi, 11*(1), 47-58.

Priyono, P., Muslim, I. F., & Widiyarto, S. (2022). Pemahaman Bacaan Siswa SMP Alikhlas Melalui Literasi Baca dan Tulis. *Jurnal Ilmiah Wahana Pendidikan, 8*(13), 494-498.

Rahmatullah, M. F., Pasani, C. F., & Yulinda, R. (2021). Pengembangan bahan ajar berbasis literasi sains bermuatan karakter toleransi untuk siswa SMP pada materi pewarisan sifat. *Pahlawan Jurnal Pendidikan Sosial Budaya*, *17*(2), 1-10.

Rodliyah, U., & Fadly, W. (2023). Meningkatkan kemampuan kolaborasi melalui model guided inquiry berbasis education for sustainable development pada materi biotik dan abiotik. *Jurnal Tadris IPA Indonesia*, *3*(2), 169-179.

Rohmah, N., Azza, A., & Dewi, I. C. (2023). Development of contextual learning models through collaboration between lecturers, students, and village governments in nursing education. *Korean Journal of Medical Education, 35*(1), 71-83.

Rohman, A. (2022). Literasi dalam meningkatkan kemampuan berpikir kritis di era disrupsi. *Eunoia (Jurnal Pendidikan Bahasa Indonesia)*, *2*(1), 40-47.

Sarah, T., & Witarsa, R. (2023). Pengaruh pembelajaran kolaborasi terhadap keterampilan menirukan gerak hewan pada siswa sekolah dasar. *Journal of Education Research, 4*(1), 226-233.

Setiyaningsih, S., & Subrata, H. (2023). Penerapan problem based learning terpadu paradigma konstruktivisme Vygotsky pada kurikulum merdeka belajar. *Jurnal Ilmiah Mandala Education*, *9*(2), 1322-1332.

Sholikah, S. K., Sunarti, S., & Masfingatin, T. (2023). Meningkatkan keterampilan berkolaborasi siswa SMP melalui model PJBL dengan pendekatan TARL. *Jurnal PTK dan Pendidikan*, *9*(1), 47-58.

Sisamud, K., Chatwattana, P., & Piriyasurawong, P. (2023). The Project-Based Learning Using Design Thinking Model via Metaverse to Enhance Buddhism Innovators. *Higher Education Studies, 13*(3), 10-17.

Sufajar, D., & Qosyim, A. (2022). Analisis keterampilan kolaborasi siswa SMP pada pembelajaran IPA di masa pandemi COVID-19. *Pensa: E-Jurnal Pendidikan Sains, 10*(2), 253-259.

Susanti, A. I., Nurparidah, R., & Mandiri, A. Evaluation of problem-based learning models in the integrated midwifery curriculum. *Inovasi Kurikulum, 21*(1), 217-228.

Wanglang, C., & Chatwattana, P. (2023). The project-based learning model using gamification to enhance 21st century learners in Thailand. *Journal of Education and Learning, 12*(2), 99-105.

Wiartis, W. (2021). Penerapan Model Pembelajaran Project Based Learning Untuk Meningkatkan Kemampuan Belajar Siswa Melalui Kegiatan Kolaborasi Mata Pelajaran Bahasa Inggris Di SMP Negeri 6 Batam. *Daiwi Widya, 7*(5), 47-63.

Winarso, W., & Haqq, A. A. (2020). Where exactly for enhance critical and creative thinking: The use of problem posing or contextual learning. *European Journal of Educational Research, 9*(2), 877-887.