



## Challenges of Implementing Project-Based Learning Models in Secondary Schools in Various Countries

Rizki Ridha Syahdia<sup>1</sup>, Harti Nuryani<sup>2</sup>, Mira Nuryanti<sup>3</sup>, Nuniek Setya Sukmayani<sup>4</sup>

<sup>1,2,3,4</sup>Faculty of Education and Science, Swadaya Gunung Jati University

Corresponding Author Email: syahdiarizky@gmail.com

**Abstract:** This article describes implementing project-based learning models in various countries that can be used as a reference in learning in Indonesia. This study uses a qualitative approach with descriptive analysis. The data collection technique uses a literature review (study literature) made from books and scientific articles. The study results indicate similarities in implementing project-based learning models in several countries, including the benefits and obstacles. The benefits of the project-based learning model are that it can improve student learning outcomes, increase student enthusiasm and activeness in learning, and increase a sense of responsibility, teamwork, and independence in conducting learning. In addition to the benefits, several things become obstacles for teachers in implementing project-based learning models, namely limited time management, inadequate infrastructure, and the need for teachers with the competence to carry out learning using project-based models.

**Keywords:** implementation, learning model, project-based learning, secondary school

---

### INTRODUCTION

Learning can be done well if it fulfills the learning elements: students, educators, learning motivation, teaching materials, learning media/models, and understanding climate (Afriani et al., 2023). Therefore, the quality of education depends on the implementation or completeness of the learning elements. Several factors are the basis for learning achievement. One is that the teacher can master the various teaching methods and techniques needed to manage the class (Nurhamidah & Nurachadijat, 2023). In line with that, it is also necessary to determine the suitable learning model to help the teaching and learning process in the classroom (Noorhalida et al., 2023). Teachers have a role in choosing learning models that follow the subject matter, student characters/abilities, and variations in the models used (Nurhamidah & Nurachadijat, 2023). In other words, teachers can determine the learning model they think is appropriate for the classroom by

considering various factors that affect learning activities. (Angga et al., 2022) stated that today, we live in the 21st era, also called the knowledge age. The 21<sup>st</sup> century requires humans to have four primary skills: critical thinking, creativity, collaboration, and communication (Taryono et al., 2019). Education is one of the efforts so that people can meet and balance the demands of 21st-century skills (Angga et al., 2022). All the skills demanded by the 21<sup>st</sup> century are not obtained by every human being directly, but a process of learning, training, and experience is needed. To get around this, teachers need to consider using a suitable learning model to train students to have 21st-century skills because the 21<sup>st</sup> century demands using student-centered learning models (Redhana, 2019). Project-based learning design can be the right choice because it involves students participating in solving real learning problems (Ulya & Sukmawati, 2023).

The project-based learning model is a learning model that uses projects as the center of student learning. In this case, the teacher's role is only as a guide to help students complete the project (Ratri & Nurfalalah, 2023). Meanwhile, Alwi et al. (2021) said that the project-based learning model focuses on student activities to explore, assess, and provide information or solutions as the final result of problem-solving in various forms. In line with the definition described by Alwi et al. (2021), Hadi & Ramadhana explained that project-based learning not only examines the relationship between theory and practice but also provides motivation for students to reflect on the things they learn in learning a real project (2022). Based on these definitions, it can be concluded that in project-based learning students will learn directly through the facts they find while working on the project.

Most teachers have implemented the project-based learning model. This can be seen through a study entitled *Improving Fantasy Story Text Writing Skills Through Project-Based Learning Model Using Film Media* conducted by Margawati (2021). She said, "The project-based learning model can run effectively and make students active". This study also refers to the results of research by Sambuaga et al., (2023) with the title *Learning to Write Short Story Texts (Short Story) Through the Project-Based Learning Model (PJBL) for Class IX A Binsus students of SMP Negeri 2 Tondano* which explains that the project-based learning model can improve student learning outcomes.

The following research that is a reference for this research is research conducted by Assaf (2023) entitled *Impact of the Rigorous Curriculum Design for Project-Based Learning Implementation on Middle School Students' Science Achievement and MAP*

*Progress* and research by Viro et al. (2020) entitled *Teacher's Perspectives on Project-Based Learning in Mathematics and Science*. Both studies concluded that the project-based learning model has a positive impact on improving learning outcomes.

Based on the above studies that positively impact the implementation of project-based learning models, we are interested in describing the implementation of project-based learning models from various countries. The problem formulation that is the focus of this research is how is the implementation of project-based learning models in various countries? In connection with that, this research aims to know and describe the implementation of project-based learning models in multiple countries that can be used as a reference in learning in Indonesia. The usefulness of this research is as a form of inspiration and reflection for teachers in Indonesia regarding project-based learning models that offer a variety of positive impacts on the world of education.

## **METHOD**

This research belongs to the type of qualitative descriptive research because it aims to understand a phenomenon by describing it in the form of language (Thalhah, 2022:65). In line with that, Fadli (2021) explained that qualitative research is a research method used to gain an understanding of human and social issues. Sugiyono (2019:178) also explained that researchers use qualitative methods to obtain in-depth data/meaning of the theory. Therefore, qualitative research is a study used to describe and explain a fact in language (words and sentences).

This research article is a literature or literature study based on references from the literature review. Fahlevi (2022) states that a literature study is a research from books, research articles, or other literature used as a research idea. This article highlights the phenomenon related to the implementation of project-based learning models carried out in various countries.

## **RESULTS AND DISCUSSION**

This study's results are based on implementing project-based learning models in various countries. The selected countries are divided into developed and developing countries. The developed countries in this study are Finland, the United States, and the United Arab Emirates, while the developing countries in this study are Pakistan, Algeria, Ethiopia, and Indonesia.

### **Implementation of Project-Based Learning Model in Finland**

The Finnish National Education Agency (EDUFI) urges teachers to use project-based learning models to develop students' skills in the 21st century with advanced technology (Viro et al., 2020). The research entitled *Teachers' Perspective on Project-Based Learning in Mathematics and Science*, conducted by Viro et al. (2020), describes the implementation of the project-based learning model and teachers' perceptions of it.

He says the project-based learning model is applied by following student-oriented characteristics and involving students in an actual project as problem-solving. When students do their projects, teamwork is highly featured when applying the project-based model. This can simultaneously train students to have the ability to work together or collaborate, which is one of the four 21st-century skills, namely collaboration, critical thinking, creativity, and communication (Taryono et al., 2019). In its implementation, the connection between theory and practice is very important for teachers in Finland to pay attention to when implementing this model. This learning model also has a positive impact in terms of its contribution to increasing students' motivation and enthusiasm when learning. This is in line with the advantages of the project-based learning model described by Nugraha et al. (2023), who said that the project learning model can increase students' learning motivation because, in practice, they will go through a series of projects that can encourage them to be active and think creatively.

Furthermore, according to Viro, most teachers in Finland argue that project-based learning models can be used in all learning, and a small percentage say that this model can only be used for learning with material that is not too important. This is almost in line with Nugraha's opinion, which argues that each subject has its difficulties, and not all of them can be combined with project-based learning models (Nugraha et al., 2023). In addition, they said, "Several factors can influence the application of project-based models, namely: resources provided by schools, professional ability, and motivation teachers, available project ideas, student competence before the project, the interaction between students and teachers or students with students, schedule flexibility, and curriculum."

### **Implementation of the Project-Based Learning Model in the United States**

The United States is a country that has a high level of progress in all fields, including education. A project-based learning model has been implemented in the country and in a research conducted by Carrabba & Farmer (2018) entitled *The Impact of Project-Based Learning and Direct Instruction on The Motivation and Engagement of*

*Middle School Students*. The research presents a study on the effectiveness and impact of implementing a project-based learning model at the middle school level in America.

The project-based learning model is implemented as an active learning model for students. In practice, the control of the class is partially in the hands of the teacher, which causes students to be unable to think creatively. Since students are directly involved, the classroom condition is more active because students can investigate what they want to know. Students' freedom to create projects and actively participate in learning is essential for their knowledge construction (Haatainen & Aksela, 2021). It can also familiarize them with learning independently.

This learning model also has a positive impact on student learning motivation. After learning using a project-based model, students' learning motivation has increased. This is because students can make better choices and have more control over their learning. This aligns with the opinion of Ulya and Sukmawati (2023), who said that project-based learning will encourage students to plan, design, and implement their projects independently and freely. The students are also enthusiastic about participating in the teaching because they can do something they may have never done through the project.

### **Implementation of Project-Based Learning Model in the United Arab Emirates**

The United Arab Emirates is one of the developed countries in the Asian region that has also implemented a project-based learning model in education. Research conducted by Assaf (2023) entitled *Impact of the Rigorous Curriculum Design for Project-Based Learning Implementation on Middle School Students' Science Achievement and MAP Progress* noted the process of implementing a project-based learning model in Abu Dhabi, United Arab Emirates.

Before implementing the project-based learning model in the classroom, teachers are encouraged to pay attention to several things. First, students should be involved in providing knowledge and learning experiences using the project-based model. Second, students' learning outcomes depend on the selection of topics as well as students' interests and talents. They are third, presenting students' project results to display their skills during the lesson. Fourth, group formation will allow students to share their experiences and perspectives in completing the project. Finally, group learning can create a culture of togetherness and mutual respect.

Implementing a project-based learning model brings multiple benefits to schools in Abu Dhabi. The project-based model considerably impacts student academic achievement

and increases student engagement in learning. Student activeness in the learning process can be a stimulus to develop talents, develop critical thinking skills, and train students to get used to solving problems (Anggraini, 2021). In addition, this learning model can also increase student confidence and reduce the level of learning anxiety experienced by students. A project-based learning model has not been perfectly implemented in the United Arab Emirates. There are several obstacles experienced by teachers in implementing it, such as school policies that need to support project-based models, poor time management, required teacher professional development, and high assessment expectations. In practice, teachers can experience obstacles when implementing learning models, as described by Ulya & Sukmawati (2023). According to him, there are three obstacles experienced by teachers in implementing project-based learning models: administrative, time allocation, and students' ability levels.

### **Implementation of Project-Based Learning Model in Algeria**

Algeria is a country in the African continent classified as a developing country. This country also implements a project-based learning model in its educational practices. This can be seen through research conducted by Baghoussi & El Ouchdi (2019) entitled *The Implementation of The Project-Based Learning Approach in The Algerian EFL Context: Curriculum Designers' Expectations and Teachers' Obstacles*, which discusses the implementation of the project-based Learning Model and the obstacles experienced by the teachers there.

The curriculum and learning books have integrated the project-based model to be implemented by teachers in the classroom. Most teachers are familiar with the terms project-based learning model and student-centered learning. However, the implementation of a project-based learning model still needs to be improved. This is because the teachers experienced several obstacles there. These, namely textbooks do not match the number of students, book contents that contain too many units and non-project tasks, limited time, lack of learning infrastructure (computers, projectors, posters, and so on), low student learning motivation, and lack of teacher training programs on project-based learning models. Widiastuti (2021) said there are three obstacles to implementing project-based models: a lot of time and money, a variety of media and learning resources, and teachers and students are equally ready to learn. This confirms that even a learning model that is said to be effective may not necessarily be adequately implemented if there are unready learning elements. In addition, poor implementation of a learning model can also be

influenced by a country's culture and education system (Haatainen & Aksela, 2021). Therefore, the readiness of all elements that can affect learning success is needed.

### **Implementation of Project-Based Learning Model in Pakistan**

Pakistan is one of the developing countries in the Asian region that implements a project-based learning model. Researchers of project-based learning models in Pakistan that we take are researchers Nahimatullah et al., (2023) with the title *The Perspective of Secondary School Educators Towards Project-Based Learning (PBL): A Case Study of Private and Public Institutes of Sukkur, Sindh*. The research explains that implementing a project-based learning model is more widely used by public schools than private schools. This is because teachers in private schools argue that students are less involved in learning, inversely proportional to the character of project-based learning models that require direct student involvement in learning. Furthermore, Nahimatullah et al. (2023) explained that the project-based learning model is more effective compared to the application of conventional learning models.

According to him, teachers in Pakistan have implemented the project-based model as much as possible. The students are given the task of making a project in learning. Learning activities are carried out by requiring them to be able to learn independently and be responsible for the activities they do. This is emphasized by Widiastuti, who states that the project-based learning process gives students the freedom to determine the things they will do or create themselves, making learning fun because students are more creative and critical (2021). However, the teacher is not entirely passive; the teacher is in charge of monitoring students' completion of the project and evaluating the results of their project.

Most teachers in Pakistan said that the project-based learning model positively impacts learning because students tend to be more active in learning. They are directly involved in the projects they work on, so their learning outcomes have improved. Activities that familiarize students with active, creative, and critical thinking will enable them to do explorations that can construct their knowledge in learning (Alwi et al., 2021). The project-based learning model is an excellent way to support students working and learning in teams, discussing and sharing ideas, and motivating each other to solve real challenges.

In addition, Nahimatullah et al. also outlined the difficulties teachers in Pakistan face in implementing project-based learning models, namely regarding time management,

the lack of teachers who understand the application of this learning model, and the scarcity of technology, such as the lack of electronic facilities and internet networks.

### **Implementation of Project-Based Learning Model in Ethiopia**

Ethiopia is a developing country with the second largest population on the African continent. In Ethiopia, secondary education institutions (SLTP) have implemented a project-based learning model. This can be seen from the research conducted by Alemneh & Gebrie (2024) entitled *The Role of Project-Based Learning in Improving The Writing Ability and Sub Writing Abilities of 10<sup>th</sup> Grade Amharic Speaking Students*, which is a research on the application of this project-based learning model conducted in secondary schools in Ethiopia.

Implementing a project-based learning model has a significant role in learning in schools in Ethiopia. This learning model can help improve students' learning outcomes, especially in foreign language lessons. In addition, the project-based learning model can enhance students' writing skills when used in writing. Writing activities are also related to language skills because, by writing, students can simultaneously practice their language skills (Wagirun & Irawan, 2019). This learning model also impacts changing students' interest in learning for the better, such as doing assignments, working together in teams, improving listening skills, and building good communication. Margawati (2021) stated that project-based learning can improve student learning behavior, such as enthusiasm for learning, focus and concentration, and responsibility for their duties. If this kind of learning behavior continues to be accustomed, it can make learning more optional, so the possibility of achieving learning outcomes will be greater.

### **Implementation of Project-Based Learning Model in Indonesia**

The project-based learning model is becoming popular among teachers in Indonesia. Research conducted by Putri et al. (2023) entitled *Implementation of Project-Based Learning (PjBL) Model with Differentiation Approach to Improve Critical Thinking Ability* describes the implementation of project-based learning models in Indonesia.

He states, "The project-based learning model can be combined with several learning approaches, one of which is a differentiated approach" (Putri et al., 2023). The steps of project-based learning consist of six syntaxes: providing essential questions, designing tasks, arranging project activity steps, monitoring project progress, assessment, and evaluation. The result of the study noted that the project-based learning model can

increase student activeness, which also has an impact on improving student learning outcomes. Ideally, teachers and students should apply the project-based learning model well. In that case, students' learning motivation will certainly increase so that their learning achievement can also increase due to the teacher's encouragement of activeness, participation, and innovation (Nababan et al., 2023).

There are multiple similarities based on studies on project-based learning models in various countries. The benefits provided by the project-based learning model are similar in that it can improve student learning outcomes, increase student enthusiasm and activeness in learning, and increase a sense of responsibility, teamwork, and independence in learning. Learning that can build an attitude of collaboration can help foster and improve critical and creative higher-level thinking skills (Hadi & Ramadhana, 2022). Therefore, with the implementation of the project-based learning model, students can learn and think together and produce an actual project/product based on the material studied (Cahyaningsih et al., 2020). In addition to providing benefits, it turns out that the implementation of project-based learning models cannot be implemented perfectly because some researchers state that there are still obstacles that hinder the implementation of this learning model, such as limited time management, inadequate infrastructure, and lack of teachers who have the competence to be able to implement learning using project-based models. Thus, a lesson will achieve good results if a teacher can properly utilize the learning model used in the classroom (Perayani & Rasna, 2022).

### **Challenges of Implementing Project-Based Learning Model in Indonesia**

Project-based learning has been implemented in Indonesia for quite some time. This is supported by various studies examining everything related to project-based learning models, such as preparation, implementation, and evaluation. This learning model is considered effective in achieving learning objectives. This is supported by researchers Zaharah & Silitonga (2023), who explained the benefits/advantages contained in the project-based learning model, namely: (1) developing critical and creative attitudes; (2) creating active and interactive learning; (3) student-centered learning; (4) training students to learn independently; and (5) providing more profound understanding/knowledge.

Before determining the learning model used in class, teachers need to consider the problems or needs of students in learning, for example, lack of student activeness in class, low student understanding of the material, and others. This is confirmed by research conducted by Oppusunggu & Hasibuan (2023), Afriani et al. (2023), Ratri & Nurfalaha,

(2023), which explained that the problems experienced by students in learning, namely lack of student activeness, low enthusiasm in learning, low understanding of the material, bland/unmemorable learning, and teacher-centered learning. Furthermore, Ratri & Nurfalalah explained that a number of these problems can be overcome by selecting a learning model because the selection of a suitable learning model is one of the things that is believed to improve and improve learning outcomes (2023). One of the learning models that can make students active, creative, and independent in learning is the project-based learning model because, through this model, students can make observations and research, assessments, and interpretations and collect and discuss information to carry out activities during the project (Siagian, 2021).

In its implementation, the project-based learning model is implemented with six syntaxes consisting of providing essential questions, conducting project planning, preparing schedules, monitoring activities, assessing, and evaluating (Perayani & Rasna, 2022; Zaharah & Silitongan, 2023). In this application, most researchers highlighted the positive impacts found in the project-based learning model. Irfadila & Martin (2022), in their research, concluded that students gave a positive response to the use of project-based learning models in the classroom. This was characterized by good and very good percentage values from three indicators, namely the suitability of the model with the teaching material on average reaching the good category, and student learning outcomes were in the very good category. This is similar to Triningsih's research (2021), which states that there is an increase in students' ability to learn, as evidenced by the increasing percentage of learning motivation scores and learning outcomes. The next research was conducted by Halawa (2024), "The application of the project-based model can make students more confident, motivated in learning, more creative, and able to convey ideas to teachers and other students."

The implementation of the project-based learning model does not fully run well because, in reality, there are several obstacles experienced by teachers in applying this learning model. Zaharah & Silitonga (2023) said that the main problem faced in implementing project-based models is students who are not accustomed to learning using these models, so teachers often switch to using conventional methods so that students better understand the material. Other obstacles such as the need for much time, teachers who are more comfortable using traditional learning models, the difficulty of students

gathering information, and many students who are passive during learning are also problems that teachers often face (Nurhamidah & Nurachadijat, 2023).

The existence of positive impacts and constraints in implementing project-based learning models both in Indonesia and in six other countries can be used as a reference for teachers in Indonesia when implementing this learning model. The selection of a project-based learning model should be adjusted to the characteristics and needs of students. Various obstacles described by implementing project-based learning models in multiple countries can be used as a reflection and challenge for teachers in Indonesia to innovate in implementing project-based learning models better.

## CONCLUSION

Based on the discussion about the implementation of project-based learning models in various countries, it can be concluded that the implementation of project-based learning models has similarities in terms of benefits and obstacles experienced by teachers. The benefits of the project-based learning model include improving student learning outcomes, increasing student enthusiasm and activeness in learning, and increasing a sense of responsibility, teamwork, and independence in learning. In addition, some obstacles for teachers in implementing project-based learning models include limited time management, inadequate infrastructure, and the lack of teachers who have the competence to carry out learning using project-based models. As for future research, we suggest expanding the scope of the country that is the subject of study regarding implementing project-based learning models.

## Acknowledgement:

The researcher would like to thank Swadaya Gunung Jati University and the lectures, as collaborator lecturers who have guided us in the preparation of this article. We also thank those who have contributed to the preparation of this article, so we can complete this research article well

## BIBLIOGRAPHY

- Afriani Mefliza, Harjono Hary Soedarto, & Rustam. (2023). Penerapan Model Pembelajaran Berbasis Proyek Pada Materi Menulis Teks Deskripsi. *Jurnal Basicedu*, 8(1), 466–467. <https://journal.uii.ac.id/ajie/article/view/971>
- Alemneh, S., & Gebrie, G. (2024). The role of project-based learning in improving the writing ability and sub- writing abilities of 10th grade Amharic speaking students. *Social Sciences and Humanities Open*, 9(February), 100843. <https://doi.org/10.1016/j.ssaho.2024.100843>
- Alwi, A., Rozak, A., & Wiradinata, R. (2021). Penguatan Aspek Kreativitas Melalui Pembelajaran Menulis Teks Narasi Dengan Model Berbasis Proyek. *Jurnal Tuturan*,

- 10(1), 1. <https://doi.org/10.33603/jt.v10i1.5227>
- Angga, A., Abidin, Y., & Iskandar, S. (2022). Penerapan Pendidikan Karakter dengan Model Pembelajaran Berbasis Keterampilan Abad 21. *Jurnal Basicedu*, 6(1), 1046–1054. <https://doi.org/10.31004/basicedu.v6i1.2084>
- Anggraini, P. D. (2021). Analisis Penggunaan Model Pembelajaran Project Based Learning Dalam Peningkatan Keaktifan Siswa. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 9(2), 292–299. <https://doi.org/10.26740/jpap.v9n2.p292-299>
- Assaf, N. F. (2023). Impact of the Rigorous Curriculum Design for Project-Based Learning Implementation on Middle School Students' Science Achievement and MAP Progress. *Journal of Education and Learning*, 12(6), 139. <https://doi.org/10.5539/jel.v12n6p139>
- Baghoussi, M., & El Ouchdi, I. Z. (2019). The Implementation of the Project-Based Learning Approach in the Algerian EFL Context: Curriculum Designers' Expectations and Teachers' Obstacles. *Arab World English Journal*, 10(1), 271–282. <https://doi.org/10.24093/awej/vol10no1.23>
- Cahyaningsih, N. R., Siwanto, J., & Sukamto. (2020). Keefektifan Model Project Based Learning Berbantu Multimedia Power Point Terhadap Hasil Belajar IPA. *Journal on Education*, 5(3), 8016–8024. <https://doi.org/10.31004/joe.v5i3.1591>
- Carrabba, C., & Farmer, A. (2018). The Impact Of Project Based Learning And Direct Instruction On The Motivation And Engagement Of Middle School Students. *Language Teaching and Educational Research*, 1(2), 163–174.
- Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. *Humanika*, 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1.38075>
- 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. <https://doi.org/10.32923/kjimp.v5i2.2714>
- Haatainen, O., & Aksela, M. (2021). Project-based learning in integrated science education: Active teachers' perceptions and practices. *Lumat*, 9(1), 149–173. <https://doi.org/10.31129/LUMAT.9.1.1392>
- Hadi, A., & Ramadhana, R. (2022). Efektivitas Model Pembelajaran Berbasis Proyek (Project Based Learning) Terhadap Kemampuan Berpikir Tingkat Tinggi Kelas VIII-A MTs Negeri 2 Makassar. *EQUALS: Jurnal Ilmiah Pendidikan Matematika*, 5(1), 46–54. <https://doi.org/10.46918/equals.v5i1.1228>
- Halawa, E. (2024). Meningkatkan Kemampuan Menulis Teks Puisi Rakyat ( Pantun ) melalui Penerapan Model Pembelajaran PjBL ( Project Based Learning ) di SMP Negeri 6 Satu Atap Ulunoyo Tahun Pelajaran 2022 / 2023. *Jurnal Pendidikan Tambusai*, 8(1), 8370–8377.
- Irfadila, M. S., & Martin, M. (2022). Persepsi Siswa Tentang Penerapan Model Pembelajaran Berbasis Proyek (Project-Based Learning/PJBL) Pada Mata Pelajaran Bahasa Indonesia Di SMA Muhammadiyah Padangpanjang. *Inovasi Pendidikan*, 9(2), 61–67. <https://doi.org/10.31869/ip.v9i2.3905>
- Margawati, S. (2021). Peningkatan Keterampilan Menulis Teks Cerita Fantasi Melalui Model Project Based Learning Menggunakan Media Film. *Pendidikan Indonesia*, 2(1), 95–104. [72-Article Text-711-1-10-20210125.pdf](https://doi.org/10.20210125.pdf)
- Naimatullah, H., Shaikh, R. B., Kataria, P., & Noorunisa. (2023). The Perspectives of Secondary School Educators Towards Project-Based Learning (PBL): A Case Study of Private and Public Institutes of Sukkur, Sindh. *Sukkur IBA Journal of Educational Sciences and Technologies*, 3(1), 74–93. <https://doi.org/10.30537/sjest.v3i1.1201>

- Nababan, D., Marpaung, A. K., & Koresy, A. (2023). Strategi Pembelajaran Project Based Learning (PJBL). *Pendidikan Sosial Dan Humaniora*, 2(2), 706–719. <https://publisherqu.com/index.php/pediaqu>
- Noorhalida, N., Yuliani, H., & Santiani, S. (2023). Studi Literatur: Pengaruh Project Based Learning Pada Pembelajaran Fisika. *ORBITA: Jurnal Pendidikan Dan Ilmu Fisika*, 9(2), 200. <https://doi.org/10.31764/orbita.v9i2.15688>
- Nugraha, I. R. R., Supriadi, U., & Firmansyah, M. I. (2023). Efektivitas Strategi Pembelajaran Project Based Learning dalam meningkatkan Kreativitas Siswa. *Jurnal Penelitian Dan Pendidikan IPS*, 17(1), 39–47. <http://ejournal.unikama.ac.id/index.php/JPPi>
- Nurhamidah, S., & Nurachadijat, K. (2023). Project Based Learning dalam Meningkatkan Keterampilan Belajar Siswa. *Jurnal Inovasi, Evaluasi Dan Pengembangan Pembelajaran (JIEPP)*, 3(2), 67–74. <https://doi.org/10.54371/jiepp.v3i2.273>
- Oppusunggu, H. B. M., & Hasibuan, M. S. (2023). Penerapan Model Pembelajaran Project Based Learning (PJBL) Untuk Meningkatkan Keaktifan Dan Hasil Belajar Bahasa Indonesia Siswa Kelas X MPLB 4 SMK Negeri 7 Medan Tahun Ajaran 2022/2023. *Jurnal Basataka (JBT)*, 6(1), 139–146. <https://journal.unpas.ac.id/index.php/pendas/article/view/9001>
- Perayani, K., & Rasna, I. . (2022). Pembelajaran Keterampilan Menyimak Dengan menggunakan Media Podcast Berbasis Model Pembelajaran Project Based Learning (PJBL). *Jurnal Pendidikan Dan Pembelajaran Bahasa Indonesia*, 10(2), 230–231. [https://ejournal2.undiksha.ac.id/index.php/jurnal\\_bahasa/article/view/695](https://ejournal2.undiksha.ac.id/index.php/jurnal_bahasa/article/view/695)
- Putri, A. P., Rachmadiarti, F., & Kuntjoro, S. (2023). Implementation of Project Based Learning (PjBL) Model with Differentiation Approach to Improve Critical Thinking Ability. *International Journal of Current Educational Research*, 2(2), 140–149. <https://doi.org/10.53621/ijocer.v2i2.250>
- Ratri, I. R., & Nurfalah, E. . (2023). Studi Komparasi Model Problem Based Learning (PBL) dan Project Based Learning (PJBL) Terhadap Hasil Belajar Matematika Siswa Kelas VIII SMP Negeri 4 Tuban. *Innovative: Journal Of Social Science Research*, 3, 10985–11001. <http://j-innovative.org/index.php/Innovative/article/view/3454%0Ahttps://j-innovative.org/index.php/Innovative/article/download/3454/2457>
- Redhana, I. W. (2019). Mengembangkan Keterampilan Abad 21 Dalam Pembelajaran Kimia. *Jurnal Inovasi Pendidikan Kimia*, 13(1), 2239–2253.
- Sambuaga, M. G., Palar, W. R., & Polii, I. J. (2023). Pembelajaran Menulis Teks Cerpen Melalui Model Pembelajaran Project Based Learning (PJBL) Pada Siswa Kelas IX A Binsus SMP Negeri 2 Tondano. *Kompetensi*, 3(02), 1980–1989. <https://doi.org/10.53682/kompetensi.v3i02.5882>
- Siagian, R. (2021). Pembelajaran Berbasis Proyek Pada Pokok Bahasan Bahan Alam Untuk Meningkatkan Kreativitas Siswa Kelas VIII SMP Negeri 1 Sigumpar. *Journal of Applied Technology and Informatics Indonesia*, 1(2), 49–53. <https://doi.org/10.54074/jati.v1i2.39>
- Sugiyono. (2019). Metode *Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Taryono, T., Saepuzaman, D., Dhina, M. A., & Fitriyanti, N. (2019). Penerapan Pembelajaran Berbasis Proyek dan Pembelajaran Berbasis Masalah pada Mata Pelajaran Fisika untuk Meningkatkan Keterampilan Abad 21 (4Cs) Siswa SMP. *WaPfi (Wahana Pendidikan Fisika)*, 4(1), 89. <https://doi.org/10.17509/wapfi.v4i1.15825>
- Thalhah, S. Z., Ratnaningsih, P. W., E, Andi Aris Mattunruang SHasibuan, S., & Rodliyah,

- I. (2022). *Media penelitian kualitatif*. Klaten:Tahta Media Grup.  
<http://belajarsikologi.com/metode-penelitian-kualitatif/>
- Triningsih, D. E. (2021). Penerapan Aplikasi Canva untuk Meningkatkan Kemampuan Menyajikan Teks Tanggapan Kritis Melalui Pembelajaran Berbasis Proyek. *Cendekia: Cner Of Language And Cultural Studies*, Surakarta, Indonesia, 15(1), 128–144. <https://doi.org/10.30957/cendekia.v15i1.667>.
- Ulya, C., & Sukmawati, N. (2023). Problematika implementasi model pembelajaran berbasis proyek pada kurikulum merdeka di SMP Negeri 8 Surakarta. *Jurnal Sinestesia*, 13(2), 1116–1126. <https://sinestesia.pustaka.my.id/>
- Viro, E., , Darane ee Lehtonen, J. J., Outsenlahti2, T, and V., & Tahvanainen. (2020). Teachers' per rspective s on pro oject-based learn ing in mathema tics and s science. *European Jou Urnal of Science and Mathematics s Education*, 8(1), 12–31. <https://doi.org/10.30935/scimath/9544%0D>
- Wagirun, & Irawan, B. (2019). Pengembangan Model Pembelajaran Berbasis Proyek Dalam Menulis Teks Eksplanasi di Kelas XI SMA. *Indonesian Language Education and Literature*, 5(1), 74–85. <https://doi.org/10.24235/ileal.v5i1.5033>
- Widiastuti, D. A. (2021). Peranan Model Pembelajaran Berbasis Proyek dalam Meningkatkan Minat Belajar Peserta Didik pada Pelajaran IPS SMPN 4 Pangalengan. *Jurnal Pelita Bumi Pertiwi*, 2(2), 55–59.
- Zaharah, & Silitonga, M. (2023). Meningkatkan Kreativitas Peserta Didik Melalui Model Pembelajaran Berbasis Proyek (Project Based Learning) di SMP Negeri 22 Kota Jambi. *Biodik: Jurnal Ilmiah Pendidikan Biologi*, 9(3), 139–150. <https://doi.org/10.22437/biodik.v9i3.28659>.