
Learning by Project: Develop Students' Self-reflection and Collaboration Skills Using Team-Based Project

Suci Nurpratiwi

Program Studi Pendidikan Agama Islam, Fakultas Ilmu Sosial, Universitas Negeri Jakarta
sucinurpratiwi@unj.ac.id

Amaliyah

Program Studi Pendidikan Agama Islam, Fakultas Ilmu Sosial, Universitas Negeri Jakarta
amaliyah@unj.ac.id

Nada Arina Romli

Program Studi Ilmu Komunikasi, Fakultas Ilmu Sosial, Universitas Negeri Jakarta
nadaarina@unj.ac.id

Article Accepted: June, 8, 2022, Revised: July, 1, 2022, Approved: July 17, 2022

Abstrak

Artikel ini menganalisis dan menginterpretasi konsep komponen materi kurikulum Penelitian ini bertujuan untuk menganalisis pengembangan refleksi diri dan kemampuan kolaborasi mahasiswa melalui penerapan model team-based project dalam pembelajaran mata kuliah micro teaching. Penelitian dilaksanakan di Universitas Negeri Jakarta dengan subyek penelitian adalah 41 mahasiswa. Teknik pengumpulan data melalui observasi, dokumentasi, wawancara, serta penggunaan kuesioner refleksi diri. Hasil penelitian menunjukkan bahwa berdasarkan hasil refleksi diri, 72,1% mahasiswa selalu mengevaluasi performance dan berupaya lebih baik lagi dalam praktik mengajar. Adapun aspek yang perlu ditingkatkan yaitu keterampilan berbicara di depan kelas (public speaking). Sedangkan kemampuan kolaborasi mahasiswa sudah baik ditunjukkan dengan adanya sinergi dalam mengidentifikasi, meneliti, menganalisis, dan memformulasikan jawaban dan solusi dari masalah yang ditemukan serta dituangkan dalam laporan hasil proyek.

Kata Kunci: team-based project, refleksi diri, kolaborasi

Abstract

This study aims to analyze students' self-reflection and collaboration skills through the implementation of a team-based project model in learning for micro-teaching courses. The research was conducted at the State University of Jakarta, with the research subjects being 41 students. Data collection techniques through observation, documentation, interviews, and self-reflection questionnaires. The results showed that 72.1% of students always evaluate their performance and try to improve their teaching practice based on self-reflection results. The aspect that needs to be improved is speaking skills in front of the class (public speaking). Meanwhile, student collaboration skills have shown to be good, as indicated by the synergy in identifying,

researching, analyzing, and formulating answers and solutions to the problems found and stated in the project report.

Keywords: team-based project, self-reflection, collaboration

Introduction

Religious education is an essential foundation in education (Mumin, 2018). This is suitable. The purpose of education requires achieving three main domains of learners: cognitive, affective, and psychomotor. Self-reflection is part of the cognitive aspect important for improving students' quality in prospective teacher-students. Self-reflection activities can help teachers enhance the quality of learning activities (Nugraha et al., 2020). Effective learning requires teachers to continue to self-reflect and investigate their teaching results (Çimer et al., 2013). The result of developing self-reflection is a change in the affective aspect of a teacher.

In the education of prospective teachers, micro-teaching learning becomes a compulsory subject for students in teacher colleges. Ideally, micro-teaching learning needs to foster self-reflection abilities for students so they can later become reflective teachers (Nurpratiwi, 2021). As quoted by Mathew, Schon argues that self-reflection can help a person develop their personality (Mathew et al., 2017). This is because there is a continuous process involving students seriously considering their own experiences in applying knowledge to practice and improve themselves.

However, there are still many teachers who lack self-reflection to improve their professional performance independently, or with their peers (Lestari, 2019), so the quality and competence of teachers stagnated and are even low. In contrast, teacher reflection and sensitivity to diverse learning styles will assist in creating equitable learning environments for all students and help them develop their self-reflection skills (Peck, 2019). Self-reflection is an experience that aims to prepare a person to face new experiences and review what he has done in an activity, to plan or use his expertise in future activities. Reflection is defined and interpreted by academics and researchers differently. However, they all accept that it is a desirable attitude and practice to improve practice and learning (Çimer et al., 2013)

On the other hand, collaboration skills are equally important. The Survey of Adult Skills conducted by the OECD in Jakarta in 2014-2015 highlighted literacy and numeracy skills related to communication and collaboration skills, showing that adults in Jakarta have scored at a low level of 326-327 with a maximum score of 500. This is relatively low compared to

the adult population in other countries (OECD, 2016). Thus, the learning efforts should include more direct students to have a harmonious life, such as living together, respecting each other's opinions, being willing to sacrifice, accommodating, and being big-hearted. This process could be done through collaborative learning (Apriono, 2013). As the demands of learning era 4.0, the ability to collaborate needs to be mastered by prospective teacher-students. As teachers, they must have good social competence and establish good relationships with fellow peer groups to improve their professional performance continuously. To improve 21st-century skills, especially collaboration skills, one of which is through a team-based project for student teacher candidates. Good collaboration skills can make teachers learn, evaluate, and improve their competencies, so this collaboration ability needs to be familiarized when sitting on the student bench.

The team-based project model is a learning model that uses projects as media and core activities. Students must carry out exploration, analysis, synthesis, assessment, problem-solving, and produce work as a form of learning outcomes. The team-based project aims for students to master the learning content, such as drilling the ability to implement concepts or theories into reality, improve higher-order thinking skills, and work skills that include a) collaborative communication, b) critical thinking, c) problem solving and creativity, and d) encourage and actively practice and independent study habits.

This study aims to see and analyze the implementation of a team-based project model to develop teacher-student self-reflection and collaboration skills. What is the effect of project-based learning on familiarizing students with self-reflection, and how can collaboration skills be built on each other through this learning to form great student-teacher candidates. Meanwhile, Kate Peck carried out previous research entitled "The Influence of Student Self-Reflection on Academic Mindset Change." This classroom action research stated significant results. Based on interviews, surveys and reflections, it shows that students valued the time and felt more optimistic about their academic futures. The amount of growth among students was remarkable. Students learn with a change mindset, feeling and looking more optimistic about their academic trajectories (Peck, 2019).

Kwan also conveyed almost the same thing in his research entitled "How Can We Reap Learning Benefits for Individuals With Growth and Fixed Mindsets?: Understanding Self-Reflection and Self-Compassion as the Psychological Pathways to Maximize Positive Learning Outcomes".

The study shows that growth mindset learners' learning process and performance outcome can be enhanced via self-reflection practice. In contrast, the learning process and performance outcome of fixed mindset learners can be improved via self-compassion practice (-Y-Kwan et al., 2022).

Finney Cherian conducted other research entitled "Learning to Teach: Teacher Candidates Reflect on the Relational, Conceptual, and Contextual Influences of Responsive Mentorship." The study focuses on the mentorship model over two student-teacher candidate teaching periods. The research concluded that opportunities to question teaching practices and co-planning and co-teaching with associates supported the development of self-reflection and educational philosophy (Cherian, 2007). On the other hand, Bujang Rahman, in his study entitled "Self-Reflection and Efforts to Improve the Professionalism of Elementary School Teachers in Lampung Province", concluded that self-reflection carried out by teachers could significantly contribute positively to professional behaviour and efforts to develop teacher professionalism. If the teacher's self-reflection is done well, his efforts to establish professionalism are also reasonable (Rahman, 2014).

The research above examines several research variables similar to this study but are not specific to students' self-reflection and collaboration abilities. This study looks further at the effect of micro-teaching learning with the main focus on projects where the results of the project implementation become a reference for student-teacher candidates in self-reflection and collaboration both now and when they become professional teachers. So this research is expected to be able to complement the studies that have been done previously.

Research Method

The research method used is qualitative research. Qualitative research is a study conducted based on the philosophy of positivism, used to examine the condition of natural objects, and researchers act as key instruments (Sugiyono, 2010). The research was carried out at the State University of Jakarta, with the research subjects being 41 students of the Islamic Religious Education study program who took the micro-teaching course.

Data collection techniques are observation, documentation, and interviews. Based on the data collection techniques used, the instruments in this study were a) online observations to observe the situation directly and indirectly in the process of implementing learning; b) supporting tools and applications used to obtain data based on observation and interview techniques (in-depth interview); c) in the form of documents related to learning.

Data collection techniques were also carried out by distributing self-reflection questionnaires to students after implementing the micro-teaching course. The researcher involved several students in obtaining data through interviews related to the learning and projects that had been produced and their effect on students' understanding and self-reflection. This approach was chosen because it provides a space for open discussion, allowing the researcher to gain insight into the selected student's point of view on the subject under investigation (Kustandi et al., 2019).

Data analysis was carried out descriptively through data reduction, data display, and concluding to get an idea of how high the level of self-reflection and collaboration abilities of prospective teacher-students was implementing a team-based project model in micro-teaching courses.

Research Finding

The Team-Based Project

The team-based project is a learning model that uses projects or activities as the core of learning (Majid & Rochman, 2014). The project learning model uses problems as the first step in gathering and combining new knowledge based on experience in actual activities. As for the three domains of learning competence, according to Hosnan, a team-based project is a learning strategy that uses projects/activities as a learning tool to achieve the three domains, namely the competence of attitudes, knowledge, and skills (Hosnan, 2014).

This learning model has great potential to provide an exciting and meaningful learning experience for students. Given that each individual has a different learning style, a team-based project offers opportunities for students to explore material using various means that are meaningful to themselves and to conduct collaborative experiments. This learning is learner-centred, which involves real-life tasks to enrich the knowledge. This learning model is one of the models that can be applied to lectures because this model has great potential to create meaningful experiences for students entering the world of work. The meaningful experiences in question include being able to train good collaboration (Saenab et al., 2019).

Learning project results begin with a project that will eventually produce results (producing/creating). Some of this can be done by: 1) Open task—consisting of a problem, perhaps resulting in multiple solutions, products, or answers to a single question; 2) Analyze

problems and produce solutions/products/answers—multidisciplinary, cross-disciplinary, interdisciplinary; 3) Design and develop solution/product/answer prototypes; 4) Improve and refine solutions/products/answers based on feedback from experts (lecturers or fellow students) (Pannen, 2020).

The steps for a team-based project are a) Project determination; b) Design of project completion steps; c) Preparation of project implementation schedule; d) Completion of projects with facilitation and monitoring of lecturers; e) Preparation of reports and presentations/publications of project results; f) Evaluation of project processes and results (Ali et al., 2016).

The team-based project model was developed based on the constructivist understanding of learning. The foundation and idea of a team-based project were initiated by John Dewey, namely learning by doing. If carried out with good preparation, the team-based project model will follow the learning objectives (Yulianto et al., 2017). Implementing this model can support students in building their knowledge in the context of their own experiences. Constructivists focus on efforts to prepare students to solve their problems in uncertain situations and in the changing times that occur so quickly (Nadhiroh & Pujiriyanto, 2020).

There are some of the advantages of the team-based project model. These include increasing students' motivation to learn and encouraging them to do meaningful work, improving their problem-solving ability, making students more active, and growing collaboration. This learning model can also involve students learning to take information, demonstrate their knowledge, and then apply it in the real world.

In a team-based project, students are required to be able to work on real projects. This can encourage students' understanding of what is being studied because 90% of learning materials will be well absorbed if learning is carried out by prioritizing direct student involvement. As Edgar Dale's theory of cones of experience:

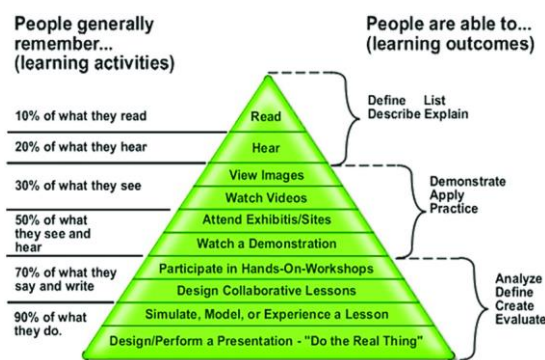


Figure 1. Edgar Dale's cone of experience

Self-Reflection

Self-reflection is a conscious mental process that relies on thinking, reasoning, and examining one's thoughts, feelings, and ideas. Self-reflection is an essential process in learning activities. In the implementation of learning, students are trained to evaluate their learning process and their experiences and achievements, including knowing their weaknesses and strengths. They then develop an appropriate improvement or follow-up plan. According to Oktaria, if it is trained, it is hoped that it will remain in the individual during the education process for a lifetime, which is to continue to become a habit of carrying out a lifelong learning process accompanied by self-reflection (Oktaria, 2015).

Reflection is a continuous activity. Reflection aims to increase professionalism and become the key to education for lecturers and students (Lisiswanti, 2013). Reflection can lead individuals to improve and develop their performance, so it is hoped that individuals will be better in the future by getting used to self-reflecting. Schon in Lisiswanti divides reflection into two: 1) Reflection on action occurs when the experience encountered in practice thinks about how to improve it in the future. This reflection is carried out after the experience, while 2) Reflection in action, which is a reflection that occurs when the individual is doing an activity and then thinks about doing something better based on his experience. The benefits of self-reflection can increase one's professionalism by improving performance and continuing to learn to strengthen every action taken so it will be better in the future.

The results of the self-reflection process can determine a new way for students to solve a problem, clarify something, and develop skills.

Collaboration

The most essential and needed competencies in the 21st century are the "Four Cs" - critical thinking, communication, collaboration, and creativity. In line with this, through Permendikbud Number 20 of 2016 concerning Graduate Competency Standards, the government encourages every graduate to have similar abilities, including creative, productive, critical, independent, collaborative, and communicative thinking and acting skills (Permendikbud Number 20 of 2016 concerning Graduate Competency Standards, 2016). Based on the skills needed in the 21st century, collaboration is one of the most critical skills. Collaboration is an activity of working together towards a common goal.

There are at least three elements or components in collaboration: communication, cooperation, and responsiveness (Hesse et al., 2015: 38).

Ali Mustadi stated, "in collaborative learning, there is no competition or rivalry among the students but mutual learning" (Mustadi, 2014). It is emphasized that there is no competition between students. Collaborative learning is carried out based on a model that explains that knowledge can be created in a population whose members actively interact with each other, share experiences, and take on asymmetrical roles or different roles (Ali Mustadi, 2014b: 20). In this regard, the PISA (Program for International Students Assessment) research states that collaboration skills are essential to encourage success and improve social aspects. These skills can be grown through learning activities in lower education or higher education.

Indicators of collaboration ability that are considered necessary include demonstrating impersonal skills, collaborative skills to achieve common goals, and an influential role in groups (Dewi et al., 2020). Many factors influence the success of a collaborative effort carried out by students. These skills are divided into four levels: (1) forming, an essential skill for creating cooperative learning groups. (2) functioning, namely students' skills in managing group activities or completing assignments and maintaining working relationships between students to be effective. (3) formulating, namely skills to build concepts and students' understanding of the material being taught to spur the use of high-level reasoning methods or strategies and maximize mastery of a material being taught, and (4) fermenting (develop), namely skills to stimulate reconceptualization material being understood, cognitive conflict, and seeking more information and communicating one's conclusions (Dewi et al., 2020).

To determine student self-reflection and collaborative abilities development, an assessment in a team-based project was carried out by looking at the process and results. The evaluation is carried out at this stage by assessing how students work (activities, participation) and their developed character. While the results, the assessment is seen from students' presentation ability and product quality (Redmond, 2014).

More clearly, self-reflection after students carry out micro-teaching learning is listed in Table 1

Table 1. Percentage of Student Self-Reflection in Micro Teaching Learning

No	Statement	%
1	Mastering more than ten active learning methods	43%
2	Integrating varied learning media when teaching practice	68%
3	After doing micro-teaching, always evaluate performance and try to do better	72,1%
4	Consistent in micro-teaching learning and discipline in completing individual and group assignments	69,8%
5	Realizing that there are still shortcomings in teaching practice	51%
6	Complete project tasks according to the planned schedule	67%
7	Demonstrate a positive attitude in group project discussions and presentations	56%

Self-reflection, as in the points above, aims for students to know their strengths and weaknesses and understand that it takes an understanding of themselves to become a professional teacher. This ability will be useful as a support for students to become experienced teachers. Having good self-reflection skills will be useful for students' self-improvement as prospective teachers to construct aspects of knowledge, attitudes, and abilities. It will also be useful for their students in the future.

Based on eight self-reflection statements, it was found that the highest percentage of students evaluating performance and trying to be better in the next performance, the result of reflection, was 72.1%. While the lowest percentage is on the mastery of active learning methods, based on their reflection results, only 43% of students have mastered more than ten active learning methods.

The student's mastery of aspects of pedagogic skills: first, mastery of varied learning method. Second, Skills in managing class. Third, prepare learning tools carefull.. Fourth, speaking skills in front of the class (public speaking). Fifth, cconfidents. Sixth, give reinforcement to the material presented. Seventh, creating creative media .

The student's mastery of aspects of pedagogic skills shown in Table.2 as follwos:

Table 2. Mastery of Student Pedagogic Skills

No	Pedagogic Skills	Average (%)
1	Mastery of varied learning methods	70,7%
2	Skills in managing class	85,4%
3	Prepare learning tools carefully	73,2%
4	Speaking skills in front of the class (public speaking)	61%
5	Confident	78%
6	Give reinforcement to the material presented	63,4%
7	Creating creative media	82,9%

The data above are aspects that need to be improved by students after self-reflection.

Discussion

Micro-teaching learning should invite students to reflect on their goals to become a teacher and foster student motivation to have a good vision for improving the quality of education and students. A team-based project is learning where students learn through situations and settings on real or contextual problems. Therefore, everything is carried out in various ways: dynamic group work, independent investigation, achieving a high level of understanding, and developing individual and social skills (Murniarti, 2016). A team-based project can also be seen as a learning model that provides opportunities for students to learn through project activities with guiding questions, then directs students to explore learning resources, make learning plans (work plans), and train collaborative learning attitudes in solving contextual problems (Sudjimat, 2016).

Micro-teaching learning with a team-based project model was carried out online. Students practice teaching micro-teaching in a virtual classroom and carry out learning to do an observation project based on the case. The project learning stage begins with students being given a stimulus to investigate a problem or case study regarding the conditions and difficulties experienced by teachers, provide solutions to the issues found, and reflect on themselves.

Specifically, the stages of the team-based project model are as follows:

1. Learning begins with a question directed as an assignment to students to carry out an activity. Topics are taken according to real-world situations or case studies and start with an in-depth investigation.

2. Plan the project. Planning is carried out jointly between lecturers and students, so students are expected to feel ownership of the project. Planning contains project implementation rules, selecting activities that can support answering essential questions by integrating various supporting subjects and informing tools and materials that can be used to complete the project.
3. Develop a schedule of activities. Lecturers and students collaboratively arrange activity schedules for completing projects. Project completion times are clearly defined, and students are given directions to manage the available time. Supervise the course of the project. Lecturers monitor student activities while completing assignments. Monitoring is done by facilitating students in each process. In other words, the lecturer acts as a mentor for student activities. Lecturers teach students how to work in a group. Students can choose their respective roles without putting aside the group's interests.
4. Assess the resulting project. The assessment is carried out to assist lecturers in measuring the achievement of standards, play a role in evaluating each student's progress, provide feedback on the level of understanding that students have achieved, and assist lecturers in preparing the next learning strategy. Product assessment occurs when each group presents its products to other groups.
5. Evaluation. At the end of the learning process, lecturers and students reflect on the activities and project results that have been carried out. The reflection process is carried out individually or in groups. Students are asked to express their feelings and experiences while completing the project at this stage.

Project assignments that need to be fulfilled are in digital form. A few weeks before the lecture ends, project assignments are delivered to students, whereas in the previous lecture meeting, students carry out guided micro-teaching practices first. After the project assignments are submitted, students and groups begin to carry out their project assignments.

Some things that need to be considered are that students must make a schedule to carry out their projects. This schedule is helpful for students to stay within the planned time frame. Each group is required to record things that occur during project implementation. Then, the lecturer guides the group in the project implementation progress at each lecture meeting. The results of the next project are presented-presentation of project results (products) using video recordings accompanied by activity reports that have been made.

The project assignments give influence the students' self-reflection. Students reflect on what has been obtained and understood from the observed cases from these assignments. The things found in implementing project assignments make students reflect on what skills they already have and which need to be improved. Presentation of project results allows students to also reflect on themselves, assessing themselves by referring to the results of projects made by other groups. It is clear, as Shin stated, that students autonomously analyze their investigation to solve their problems or make conclusions by submitting the project task or presenting it after constructing the knowledge needed to organize their ideas and their work. Besides, small group activities play an essential role in project-based learning for cooperative decision-making and problem-solving among team members. (Shin, 2018).

Team-based project is designed to be used on complex problems that students need to investigate and understand (Kumalaretna & Mulyono, 2017). The team-based project model in micro-teaching learning is designed to develop self-reflection for prospective teacher students to understand and organize their roles and functions as an educational process for themselves and their students in the future.

Self-reflection can significantly positively affect a person's cognitive and behavioural development. As Lestari mentions, self-reflection is an experience that aims to prepare a person to face new experiences and then review what things he has done in an activity to plan or use his expertise in future activities (Lestari, 2019). Developing self-awareness is an effort that must be seen as something fun, can provide valuable experience to explore and discover individual potential, and be used as a basis for deciding an action.

With self-reflection, students can learn to recognize their strengths to become qualified teacher candidates, set goals, and construct understanding to become human beings who do not stop learning (lifelong learners) so that they can understand the characteristics of students and provide the best teaching.

Students' collaboration skills can be seen in the implementation of project assignments, the process of analyzing observational data, presentations, and the resulting product results. Based on these things, students already have good collaboration skills; students also respect each other and provide input on the results of project work from other groups. Septikasari said, in working on a product, students need to be taught how to appreciate the strengths and abilities of each person in the group and how to take roles and adapt appropriately to them (Septikasari & Frasandy, 2018).

Learning only oriented to low-level cognitive learning outcomes will certainly have a less positive impact on students because students tend to be individualistic, less tolerant, and far from shared values (Apriono, 2013). Collaboration in learning will increase the value of togetherness among fellow students. Each student in the group sets learning goals and divides their respective tasks; each group member works collaboratively, synergistically identifies, researches, analyzes, and formulates answers and solutions to problems found and stated in project results reports; during the presentation, other groups are tasked with observing, comparing the results of the presentation, and submitting responses; each student in the collaborative group elaborates, inferences, and revises the results of their project work.

Aspects identified in students related to self-reflection and collaboration will encourage an improvement in their competence. This is important considering that prospective teachers must always strive to develop their competencies, knowledge, and attitudes to adapt to the times. According to Hill & Hill in Apriono, the advantages of learning by highlighting the development of collaboration skills, among others, are related to (1) higher learning achievement, (2) more profound understanding of the material, (3) being able to develop leadership skills, (5) increasing positive attitudes, (6) increasing self-esteem, (7) learning inclusively, (8) feeling belonging to each other, and (9) developing future skills (Apriono, 2013).

Thus, it is clear that student-teacher candidates must always strive to develop their abilities to implement the four teacher competencies because it will undoubtedly affect the professionalism of teachers. So it is hoped that prospective teacher-students will be able to plan, implement, and evaluate learning with careful and practical preparation to improve the quality of students because suitable teaching activities are characterized by correct and balanced learning in all aspects. So ideally, micro-teaching as a course that leads students to become Teachers with a simultaneous understanding of concepts and guided practice can make student self-reflection a material for consideration, reference, and evaluation to design better micro-teaching lectures as the central provision for prospective teacher-students to implement their teaching later. It is widely understood that teachers play an essential role in forming students' academic achievement in schools and developing students' character.

This requires teachers' professional attitudes and behaviour, which must continually develop. Teachers' self-development and professional development from the results of their self-reflection become a necessity.

In the end, paying more attention to self-reflection in the effective development of prospective teacher students to support their professionalism when they become a real teachers must continually be developed and become a particular concern, especially in the implementation of educational courses. This is important because it can make student-teacher candidates more aware of the quality of their students so that they will be more able to guide students in their learning and help mobilize the quality of students in school and their future lives.

Conclusion

Micro-teaching learning with a team-based project model can develop students' self-reflection and collaboration skills through an approach to project assignments, improve student teaching simulation practices, integrate technology-based learning (online), and produce a product. Students with good self-reflection and collaboration skills can manage themselves, know what needs to be done to improve teacher quality, determine improvement steps and evaluate themselves to support their success in becoming professional teachers. Furthermore, a team-based project with an output orientation can support the implementation of Outcome-Based Education in higher education. The team-based project learning model characteristics include students facing real-world problems, looking for solutions, and working on projects individually or in teams to overcome the problems encountered. Through the team-based project model, besides being practical, micro-teaching learning will also be product/output-oriented so that the four teacher competencies can fulfil future teacher-student needs. Thus, lecturers can direct project-based or case-based micro-teaching learning, which refers to outcomes so that they can meet the demands of 21st-century learning.

There are some limitations to this study. First, this study is still limited to a narrow research setting. The sample size of 41 students is not sufficient to generalize the findings. Second, the learning setting in this research is online. Learning can be done offline to learn more about other variables of self-reflection and collaboration that can be investigated. Further research is suggested to develop students' self-reflection and collaboration skills using a team-based project in different levels, grades, or age groups.

Bibliography

- Ali, F. A. M., Mbasi, E., Mere, S. Y., & Baitanu, N. Y. (2016). *Rencana Pelaksanaan Pembelajaran Inovatif di Sekolah Dasar Mengacu Kurikulum 2013*
- Apriono, D. (2013). Pembelajaran Kolaboratif. *Diklus*, XVII(1), 293.
- Cherian, F. (2007). Learning to Teach: Teacher Candidates Reflect on the Relational, Conceptual, and Contextual Influences of Responsive Mentorship. *Canadian Journal of Education*, 30(1), 25.
- Çimer, A., Çimer, S. O., & Vekli, G. S. (2013). How does Reflection Help Teachers to Become Effective Teachers? *International J. Educational Research*, 1(4), 134.
- Dewi, A. P., Putri, A., Anfira, D. K., & Prayitno, B. A. (2020). Profil Keterampilan Kolaborasi Mahasiswa pada Rumpun Pendidikan MIPA. *Pedagogia Jurnal Ilmu Pendidikan*, 18(1), 58.
- Hosnan. (2014). *Pendekatan Saintifik dan Kontekstual dalam Pembelajaran Abad 21: Kunci Sukses Implementasi Kurikulum 2013*. Ghalia Indonesia.
- Permendikbud Nomor 20 Tahun 2016 tentang Standar Kompetensi Lulusan, Pub. L. No. 20, 8 (2016).
- Kumalaretna, W. N. D., & Mulyono. (2017). Kemampuan Komunikasi Matematis Ditinjau dari Karakter Kolaborasi dalam Pembelajaran Project Based Learning (Pjbl). *UJMER: Unnes Journal of Mathematics Education Research*, 6(2), 197.
- Kustandi, C., Ibrahim, N., & Muchtar, H. (2019). Virtual Reality Based on Media Simulation for Preparing Prospective Teacher Education Students. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(IC2), 400.
- Lestari, S. M. P. (2019). Perbedaan Tingkat Refleksi Diri Dalam Pembelajaran Mahasiswa Fakultas Kedokteran Universitas Malahayati Tahun 2019. *Jurnal Ilmu Kedokteran Dan Kesehatan*, 6(4), 258.
- Lisiswanti, R. (2013). Refleksi: Pentingkah Bagi Dosen Pendidikan Kedokteran? *Jurnal Kedokteran (Juke)*, 3(2).
- Majid, A., & Rochman, C. (2014). *Pendekatan Ilmiah dalam Implementasi Kurikulum 2013*. PT Remaja Rosdakarya.
- Mathew, P., Mathew, P., & Prince, J. P. (2017). Reflective Practices: A Means to Teacher Development. *Asia Pacific Journal of Contemporary Education and Communication Technology (APJCECT)*, 3(1), 126.

- Murniarti, E. (2016). Penerapan Metode Project-Based Learning dalam Pembelajaran. In *Universitas Kristen Indonesia*.
- Mustadi, A. (2014). Fundamental School Reform Through Lesson Study for Learning Community (LSLC): A Study of Collaborative Learning in Indonesia and Japan. In S. M. Saleh & Sudiyono (Eds.), *International Conference on Fundamentals and Implementation of Education* (p. 87). Yogyakarta State University.
- Nadhiroh, P. S., & Pujiriyanto. (2020). Keterampilan Kolaborasi Mahasiswa Teknologi Pendidikan dalam Mata Kuliah Kewirausahaan Berbasis Proyek. *Jurnal Epistema*, 1(1), 33.
- Nugraha, I., Widodo, A., & Riandi. (2020). Refleksi Diri dan Pengetahuan Pedagogi Konten Guru Biologi SMP Melalui Analisis Rekaman Video Pembelajaran. *Jurnal Pendidikan Sains Indonesia*, 8(1), 15.
- Nurpratiwi, S. (2021). Analysis Self-Reflection of Prospective Teacher-Students on TPACK Ability Through Case-Based Learning Model. *IJECA: International Journal of Education and Curriculum Application*, 4(3), 214. <https://doi.org/https://doi.org/10.31764/ijeca.v4i3.5711>
- OECD. (2016). *Country Note-Skills Matter: Further Results from the Survey of Adult Skills*. <https://www.oecd.org/skills/piaac/Skills-Matter-Jakarta-Indonesia.pdf>
- Oktaria, D. (2015). Refleksi Diri Sebagai Salah Satu Metode Pembelajaran di Fakultas Kedokteran. *Prosiding Seminar Presentasi Artikel Ilmiah Dies Natalis FK Unila Ke 13*, 76–82.
- Pannen, P. (2020). *Case-base Learning dan Project-based Learning*.
- Peck, K. (2019). *The Influence Of Student Self-Reflection On Academic Mindset Change*. Hamline University.
- Rahman, B. (2014). Refleksi Diri dan Peningkatan Profesionalisme Guru. *Jurnal Paedagogia*, 17(1), 2.
- Saenab, S., Yunus, S. R., & Husain. (2019). Pengaruh Penggunaan Model Project Based Learning Terhadap Keterampilan Kolaborasi Mahasiswa Pendidikan IPA. *Jurnal Biology Science & Education*, 8(1), 30.
- Septikasari, R., & Frasandy, R. N. (2018). Keterampilan 4C Abad 21 dalam Pembelajaran Pendidikan Dasar. *Jurnal Tarbiyah Al-Awlad*, 8(2), 110.
- Shin, M.-H. (2018). Effects of Project-based Learning on Students' Motivation and Self-efficacy. *English Teaching*, 73(1), 97. <https://doi.org/10.15858/engtea.73.1.201803.95>

Sudjimat, D. A. (2016). Implementation Of Project Based Learning Model In Mechanical Machining Skills Package Of Vocational High School. *AIP Conference Proceedings* 1778, 030024–1.

Sugiyono. (2010). *Metode Penelitian Pendidikan*. Alfabeta.

Yulianto, A., Fatchan, A., & Astina, I. K. (2017). Penerapan Model Pembelajaran Project Based Learning Berbasis Lesson Study untuk Meningkatkan Keaktifan Belajar Siswa. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 2(3), 448.

