

# Project-Based Learning: Lecturer Participation and Involvement in Learning in Higher Education

Hirnanda Dimas Pradana<sup>1\*</sup> 

<sup>1</sup>Educational Technology, Universitas Negeri Surabaya, Surabaya, Indonesia

## ARTICLE INFO

### Article history:

Received February 03, 2023

Accepted June 09, 2023

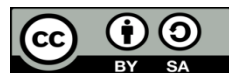
Available online July 25, 2023

### Kata Kunci:

Evaluasi, Pembelajaran Berbasis Proyek, Dosen, Pendidikan Tinggi

### Keywords:

Evaluation, Project-Based Learning, lecturer, Higher Education



This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Copyright © 2023 by Author.  
Published by Universitas Pendidikan Ganesha.

## ABSTRAK

*Pembelajaran berbasis proyek sangat menentukan partisipasi dan keterlibatan dosen dalam proses pembelajaran. Tujuan dari penelitian ini adalah untuk menganalisis kemandirian proyek berbasis pembelajaran dalam meningkatkan partisipasi dan keterlibatan dosen dalam pembelajaran di perguruan tinggi. Studi ini menggunakan pendekatan evaluatif untuk menganalisis apakah pembelajaran berbasis proyek meningkatkan keterlibatan dan minat dosen tingkat universitas terhadap pendidikan mahasiswanya. Penelitian ini menggunakan teknik purposive sampling untuk pengambilan sampelnya. Wawancara dan observasi adalah dua metode yang termasuk dalam kategori ini. Wawancara dan observasi adalah dua metode yang digunakan dalam penelitian ini. Data tersebut dianalisis dengan membandingkan partisipasi dan keterlibatan dosen sebelum dan sesudah penerapan Pembelajaran Berbasis Proyek. Hasil penelitian ini menunjukkan bahwa Project Based Learning efektif untuk meningkatkan partisipasi dan keterlibatan dosen dalam Pembelajaran serta membantu dosen dalam pengembangan kemampuan mengajarnya. Partisipasi dan keterlibatan dosen dalam prakarsa berbasis pembelajaran di lembaga pendidikan menengah akan meningkatkan kualitas pengajaran dan hasil belajar mahasiswa. Studi ini menunjukkan bahwa peningkatan penggunaan pembelajaran berbasis proyek di perguruan tinggi dapat meningkatkan partisipasi dan keterlibatan dosen dalam proses pembelajaran.*

## ABSTRACT

Project-based learning greatly determines the participation and involvement of lecturers in the learning process. This study aimed to analyze the efficacy of project-based learning in increasing lecturer participation and involvement in learning in tertiary institutions. This study uses an evaluative approach to analyze whether project-based learning increases university-level lecturers' involvement and interest in their students' education. This study used a purposive sampling technique for sampling. Interviews and observation are two methods that fall into this category. Interview and observation are the two methods used in this research. The data was analyzed by comparing the participation and involvement of lecturers before and after implementing Project Based Learning. The results of this study indicate that Project Based Learning is effective for increasing the participation and involvement of lecturers in learning and assisting lecturers in developing their teaching abilities. Lecturer participation and involvement in learning-based initiatives in secondary education institutions will improve teaching quality and student learning outcomes. This study shows that increasing the use of project-based learning in tertiary institutions can increase the participation and involvement of lecturers in the learning process.

## 1. INTRODUCTION

Evaluating Learning is a pedagogical analysis that considers learning outcomes, methods, and development. Learning is assessed by its students, teachers, and quality control agencies. Evaluation aids decision-making and boosts education. Student competence, instructional material quality, and learning environment may be considered officially or informally (Puspasari et al., 2022; Tam, 2018). Evaluation helps students see how they might benefit from learning (Barteit et al., 2020; Hidayat & Asyafah, 2019). Project-based learning success is measured by lecturers' engagement in the learning process. This learning assessment will help lecturers and institutions enhance project-based Learning, and guarantee

students benefit from it. Project-based Learning engages students in problem-solving and solution-generation via their projects (Dang, 2021; Mafrudloh & Fitriati, 2020). In this session, students will work in teams to apply their knowledge and abilities. Thus, project-based Learning enhances student learning and broadens viewpoints. Project-based Learning boosts lecturer and student engagement in higher education. In project-based Learning, the lecturer is both a lecturer and a mentor. Thus, project-based Learning facilitates fosters and lecturer involvement. Project-based Learning improves student outcomes (Huang & Yang, 2021; Rusmanto & Rukun, 2020). Project-based Learning helps students understand course content, solve challenges, and create solutions (Dang, 2021; Kautsar & Sarno, 2019; Ruslan et al., 2021). Thus, project-based Learning at postsecondary institutions improves student learning and faculty involvement. Thus, higher education should foster project-based Learning.

Evaluating learning effectiveness in boosting lecturer participation and engagement is crucial because it may determine success, enhance learning quality, encourage lecturer involvement, ensure learning goals are reached, and draw conclusions (Morales Salas et al., 2020)(Pan et al., 2021). The assessment will determine if project-based Learning has improved lecturer involvement and engagement and how much. Project-based Learning may be enhanced by assessing effectiveness. Evaluation will help identify lecturers' project-based learning involvement factors so that relevant actions may be taken to encourage them. Evaluation ensures project-based learning goals like lecturer involvement and engagement are realized. Project-based Learning will continue or change depending on effectiveness assessment outcomes. The efficacy of project-based Learning in increasing lecturer engagement and involvement is vital for success, quality of Learning, meeting learning goals, and making the right judgments. Learning evaluation must be carried out because it will help assess and provide recommendations to policymakers regarding the findings obtained in the field. Initial observations show that currently, learning in tertiary institutions uses project-based Learning. Therefore the researcher intends to evaluate project-based Learning by looking at it from the perspective of the participation and involvement of lecturers in Learning.

Project-based Learning must be evaluated to ensure faculty involvement and engagement. Project-based Learning's ability to involve lecturers in Learning will be considered. Lecturer engagement in Learning may imply class success. Evaluations improve teaching (Povedano et al., 2021; Ulker, 2021). Project-based Learning may boost lecturer involvement and engagement through assessment. The review shows if project-based Learning increases lecturer involvement and engagement. Evaluation helps discover areas for improvement and informs learning tactics (Larsen et al., 2018; Okoye et al., 2020). Project-based Learning may be evaluated to ensure its success and determine its effect. Thus, project-based Learning requires assessment to ensure lecturers' commitment and program success. Project-based Learning must be assessed to guarantee success. The evaluation may help uncover areas of Learning that need improvement (Prihatin et al., 2018; Wahjusaputri et al., 2021). Collecting and analyzing data on lecturers' participation and involvement in Learning helps do this. The assessment data may be utilized to identify areas for improvement and make modifications to improve Learning. Project-based Learning may be enhanced by assessing its effectiveness. Evaluation of project-based Learning's efficacy may help improve learning quality and ensure learning goals are accomplished. Effectiveness evaluation ensures that project-based Learning achieves its goals. The assessment may identify and enhance learning areas to maintain quality and meet Learning goals. Lecturers must be better supported in project-based Learning.

Efficacy evaluation boosts lecturer enthusiasm in Learning (Witt et al., 2021; Yuan et al., 2021). Assessment may reveal lecturer learning engagement aspects. It may entail assessing whether lecturers understand their duties and responsibilities, are familiar with the topic and have the resources to participate. Effectiveness assessment data may help decide the best way to get lecturers involved in learning (Eryanto et al., 2020; Nugroho, 2019). It may include making sure the necessary resources are available, the lecturer's learning duties and responsibilities are clear, and the learning material is easy to understand and implement. Effectiveness evaluation is essential to understanding lecturers' project-based learning engagement and finding the best ways to increase it. Thus, monitoring effectiveness assures project-based learning efficiency and optimal outcomes. Project-based learning assessment ensures that postsecondary institutions satisfy quality and student needs. The evaluation may also help identify lecturers' learning engagement, allowing for steps to increase it. Project-based learning assessment helps assess student learning outcomes and learning goals. Project-based learning evaluation may help determine the effectiveness and need for changes. Project-based learning assessment provides feedback and suggestions for improving education. The novelty of this study is to evaluate project-based Learning by looking at it from the perspective of the participation and involvement of lecturers in learning in the current uncertain era. It is hoped that with this Research, we can determine the role of project-based Learning in shaping quality learning by prioritizing the involvement and participation of lecturers in Learning. Project-based Learning must be evaluated to meet learning goals. This assessment assesses

project-based Learning's performance and if aims like increasing lecturer engagement have been reached. Project-based Learning may be improved by evaluating its efficacy. Effectiveness evaluations may help modify and meet learning goals (Joseph & Olugbara, 2018; Li & Xiao, 2021). Evaluation improves learning quality and ensures that project-based Learning gives students the most outstanding results. Project-based Learning may be enhanced by assessing its efficacy. It helps meet learning goals and maximize student success in project-based Learning. Evaluation ensures that project-based Learning achieves its goals, promotes high-quality Learning, and gives students the most Learning benefits. Research on project-based Learning and lecturers' participation in learning in higher institutions is ongoing. The new study aims to enhance project-based Learning and includes lecturers. Efficacy assessment drives project-based Learning decisions. This assessment helps assess project-based Learning's success.

The effectiveness assessment may decide whether project-based Learning should be maintained or modified for the best results. Project-based Learning must improve if the effectiveness assessment shows it failed. Project-based Learning may be perpetuated if the effectiveness review shows it met its goals. Thus, assessing efficacy is essential for decision-making to ensure learners achieve their goals (Divayana et al., 2021; Feng, 2021; Kurilovas, 2019). The purpose of this study is to analyze project-based learning to increase lecturer involvement. This Research may reveal how project-based Learning influences lecturer involvement and engagement. This study is valuable for educational practitioners and scholars interested in project-based Learning and increasing lecturer interaction and participation in Learning. This study will improve project-based Learning by engaging lecturers.

## 2. METHOD

This study employs an evaluative approach to methodology to determine whether project-based Learning increases university-level lecturers' involvement and interest in their students' education. This study used a purposive sampling technique for its sampling. Interviews and observations are two methods included in this category. These professors were responsible for instructing the students in Print Teaching Materials Development course. This study is qualitative in nature. This investigation employs interview and observation methods. Observations are used in project-based learning to acquire information about lecturers' participation and engagement, as well as lecturers' and students' interactions. The levels of engagement and participation of students are also measured through direct observation. Academics were interviewed to determine their perspectives on the advantages of project-based learning and the challenges they face implementing it in their classrooms. This research focuses on professors charged with implementing project-based learning in higher education. It is common to interpret the information garnered from interviews and observations as part of data analysis. The data can be analyzed by comparing the lecturers' participation and involvement before and after the implementation of project-based Learning, comparing the lecturers' opinions on the effectiveness of project-based Learning and the constraints encountered, and determining the relationship between project-based learning and teaching quality and student learning outcomes. Additionally, qualitative methods may be used to examine data. Aspects and Sub Aspects showed in Table 1.

**Table 1. Aspects and Sub Aspects**

Aspects	Sub Aspects
<b>Participation of Lecturer</b>	Lecturer presence in class Time to Start Learning Providing Input to Students Provision of Support to Students Giving Directions to Students Explanation of Learning Materials Student Guidance in Doing Assignments Providing Responses to Student Questions Use of Various Teaching Materials Use of Various Learning Methods Giving Feedback on Student Assignments Provision of Assistance to Students to Assess Learning Progress
<b>Involvement of Lecturer</b>	Preparation of creative lesson plans that consider students' needs and interests. Utilization of various media and technology to assist the learning process. Encourage students to work independently and motivate them to be actively involved in the learning process Develop students' ability to think creatively and think critically through the

Aspects	Sub Aspects
	assignments and projects given. Provide support and guidance to students during Learning, including providing necessary input and direction. Monitor and evaluate the learning process and student learning outcomes regularly Engage students in project discussion and evaluation, and help them identify areas of improvement and develop solutions for improvement

### 3. RESULT AND DISCUSSION

#### Result

Attendance was high, indicating that the lecturers made an effort to start classes promptly. The relationship between lecturer and student is beneficial because lecturers provide students with invaluable instruction, inspiration, and advice. Lecturers play an essential role in the education of their students by providing them with quality material, focusing their attention, and responding to their questions with consideration. One advantage is that lecturers have greater discretion in determining how to best ensure their students' content mastery, whether through lectures, assignments, or in-class debates. Equally essential are lecturers' feedback and guidance on students' endeavors to self-evaluate their progress. Better academic outcomes correlate with a professor's investment in their students and the classroom.

As evidenced by the findings, lecturers are adapting their methods to meet the requirements of each student more effectively. In the contemporary classroom, lecturers use a variety of media and technological instruments to keep students engaged and interested in their studies. Classes and required readings contribute to the development of students' critical and creative thinking abilities. Throughout the semester, lecturers evaluate their methods and the students' progress. Lecturers do more than engage students in project discussions and evaluations; they also assist students in identifying areas for improvement and developing solutions. He cares about students and learning, as evidenced by his commitment to the field.

#### Discussion

Active participation, support, and lecturer guidance are signs of a highly involved lecturer. If a lecturer is related to their student's success, they will gladly and passionately share their knowledge and insights. Evidence suggests this through lecturer participation in learning-related meetings and discussions. All participating lecturers will be available to answer students' questions and guide them (Arfyanti & Rajiansyah, 2021; Prasetyo et al., 2020). Lecturers demonstrate this by being open to assist and direct students as required. Lecturers encouraging their students to participate in class actively would repeatedly check their comprehension using clear, concise instructions (Coleman & Tuck, 2021; Hidayat, 2021). Justifications and examples presented by the lecturer directly apply to the subject matter. All three indicators point to a highly engaged lecturer who actively provides their pupil's feedback, assistance, and direction. The execution of what has been learned is succeeding.

The data shows that the lecturer is making meaningful contributions. The role of the lecturer in the maturation of the student's capacity to learn is essential. The quality of education may be enhanced if lecturers provide pertinent and practical feedback throughout the learning process. Also, lecturers who actively disseminate knowledge will better grasp their students' situations and be better equipped to assist them in succeeding academically. According to the findings, lecturers must pay close attention in class and provide students with timely, valuable comments to improve student learning. Lecturers may also give input on pedagogical methods, instructional materials, and evaluation tools. Lecturers who actively solicit and respond to such information may improve course quality and better meet the requirements of individual students. Feeling valued and acknowledged may do wonders for a student's drive (Lin, 2021; Martin & Bolliger, 2018). But remember that the lecturer's input must be appropriate to the course objectives and students' backgrounds. Therefore, lecturers must reflect on their students' requirements to provide helpful feedback. Suggests that a more hands-on approach from lecturers might boost student performance in the classroom (Ntombela, 2020; Setyawan et al., 2019).

Faculty members that take an active interest in the student's education will always be there for them when they need them. Lecturers demonstrate this by being available to assist and direct students as required. Lecturers will also provide students with resources designed to improve their grasp of the curriculum and subsequent performance in class. Lecturers will give helpful criticism and guidance for overcoming academic barriers (Fujiya et al., 2020; Kaliappen et al., 2021). Students' interest and progress in class may improve if lecturers are actively involved (Abd-Mutalib et al., 2019; Rido et al., 2020). Active

lecturers will guide students through various assignments designed to improve their Learning (Aini et al., 2020; Yusof et al., 2020). The lecturer will offer the students the necessary guidance and support to complete the assignments. Generally, a high level of lecturer participation in the learning process may be seen in providing active feedback, assistance, and direction to students. It's evidence of the lecturers' strong desire to see their students succeed academically and get involved in their education.

Lecturers encouraging their students to participate in class actively will repeatedly clarify concepts and provide examples to ensure that their pupils fully grasp the material. The lecturer presents the information clearly and provides helpful examples to aid student comprehension. Lecturers will give functional exercises and tasks to assist pupils in internalizing and applying what they've learned. Lecturers will track their student's progress and provide suggestions on best meeting their stated educational objectives (Nahdi et al., 2021; Zulaihah & Harida, 2017). Therefore, the lecturer's involvement may aid the students in comprehending the topic. Enthusiastic lecturers will provide an encouraging and dynamic classroom environment for their pupils. Lecturers may make the class more interesting and enjoyable by encouraging student participation in topical discussions, exercises, and projects. To boost their pupils' confidence and work ethic, lecturers often provide praise and encouragement (Harahap et al., 2021; Susilowati, 2020). Lecturers that take an active role in their classes often find that their students respond positively and become more engaged. Student-lecturer interaction is crucial to the success of any classroom. Lecturers interested in their student's Learning will be more equipped to assist their pupils in mastering the material. Furthermore, lecturers that foster an encouraging and exciting classroom setting will be able to boost their pupils' enthusiasm and self-assurance. Lecturers should keep encouraging class engagement to provide the ideal learning environment for their pupils.

Lecturers who demonstrate originality in class planning and project administration are invested in their student's education. Lecturers demonstrate this by devising engaging and flexible lesson plans that use various instructional strategies. Lecturers will effectively oversee student projects by communicating project expectations, providing necessary resources, and monitoring student progress. Lecturers willing to be creative will search for methods to incorporate learning applications and software into their classes to make education more engaging for their pupils. Furthermore, lecturers will seek to boost class involvement by engaging in activities, including games, small-group discussions, and projects. Lecturers will properly manage both time and materials by giving students enough time to finish assignments and projects and providing the materials they need. The lecturers will keep tabs on how their students are doing and assist as needed so that they may reach their learning objectives. Overall, a high degree of lecturer participation in the learning process is evidenced by creative lesson plan preparation (Anas, 2021; Haryudin & Argawati, 2018), competent project management, and efficient use of resources to assist students in meeting their learning objectives.

Lecturers invested in their student's education will design engaging and original lessons. Lecturers plan interesting and enjoyable learning projects for their pupils. Lecturers use cutting-edge instructional strategies to ensure that their pupils grasp the material being presented. The project is well-managed, and the lecturer gives students the direction they need to finish it (Fauji & Rahmatulloh, 2019; Sathappan & Gurusamy, 2021). To this end, it has been shown that when lecturers take an active role in their students' project-based Learning, the results are more productive and enjoyable for the students (Apriliani & Listyani, 2021; Yacub, 2021). Lecturer participation at a high level in project-based Learning may increase student interaction and enjoyment of the learning process. Lecturers who use novel teaching strategies and design assignments that reinforce course material may foster positive classroom environments. Lecturers may improve students' performance by giving them the direction they need to finish projects successfully (Ruslan et al., 2021; Tirtanawati & Prastiwi, 2022). Students are more likely to be engaged in class and to take ownership of their Learning when the lecturer takes an active role (Kulikovskaya, 2019; Lopez-Gazpio, 2022).

The findings of this observation reveal that lecturers engaged in the PBL process are better equipped to supervise student projects. This lecturer may lay out specific requirements for the assignment and make sure each student has what they need to succeed (Lu et al., 2022; Penuel et al., 2022). It may be accomplished by providing students with detailed instructions outlining the steps they need to take to finish the project successfully and by ensuring they have access to any supplies, equipment, or other resources they'll need. Furthermore, lecturers may provide the essential direction to assist pupils in finishing assignments. Therefore, lecturers who are adept in project management may aid their pupils in gaining knowledge practically and enjoyably. Consequently, it can be inferred that lecturers who take an active role in project-based Learning would be better equipped to manage projects by giving students clear goals and objectives, ensuring they have the resources they need to complete assignments, and guiding them through the process. Learning will be more efficient and enjoyable for pupils as a result.

The findings from this study reveal that lecturers who are actively engaged in the classroom do their best to use technological tools to enhance their students' knowledge acquisition. These lecturers have access to innovative tools for facilitating student learning in a lighthearted and engaging manner (Ganfri et al., 2020; Kautsar & Sarno, 2019). Educational software and apps that encourage visual and interactive Learning should be made available to pupils to achieve this goal. The use of technology in the classroom also allows lecturers to offer timely feedback and track their student's progress in Learning (Deeley, 2018; Kim, 2021). Therefore, lecturers who can incorporate technology into the classroom setting benefit their pupils by facilitating more efficient and enjoyable Learning. Lecturers may improve student engagement and retention by tailoring their use of technology to their student's learning styles (Gnidovec et al., 2020; Pienimäki et al., 2021). Not all children will thrive using just digital resources. Therefore, a healthy mix of digital and analogue approaches to education is essential.

The data shows that lecturers who put significant effort into the learning process provide engaging and enjoyable activities in class to boost student engagement. For example, the lecturer may organize games, class debates, and collaborative projects to get students involved in the learning process. To do this, lecturers might design lessons that include real-world applications of course content and provide students with various approaches to mastery. Further, lecturers may inspire and motivate students to use the supplied resources (Aoyagi et al., 2020; Yuliana et al., 2020). Students will be more engaged and enthusiastic about studying if their lecturers provide engaging and enjoyable learning activities. Students in a project-based learning course gain knowledge from the lecturer's guidelines while working on the project. Students work on science, technology, the arts, or social projects to improve their analytical, collaborative, and problem-solving abilities (Pujiastuti, 2021; Zayyinah. et al., 2022). Students' interest in Learning may be piqued through project-based Learning because of the tangible results of their efforts (Hapsari & Airlanda, 2018; Masruri, 2018). Students' interests and skill sets may surprise even themselves when given a chance to shine in the context of a project. The active participation and vested interest in their education that results from project-based Learning may also boost student engagement. Projects allow lecturers to assess students' progress and provide constructive criticism for future lessons.

The data shows that lecturers actively involved in their student's education are also careful stewards of their time and materials. Therefore, the lecturer always gives enough time for pupils to do their homework and class projects. Lecturers ensure their pupils have access to the resources they need to do their work correctly, such as the right equipment. Lecturers may assist students in achieving more extraordinary academic achievement by better managing their time and materials (Palinggi & Tambunan, 2021; Subaidi et al., 2021). Students' and lecturers' stress may be alleviated via better time and resource management. Since there is plenty of time allotted for each assignment, students won't feel pushed to do them, and lecturers won't have to spend too much time on paperwork. Therefore, efficient use of time and materials may improve the quality of education received by both students and lecturers alike.

#### 4. CONCLUSION

This study emphasizes the potential benefits of using projects in the classroom by demonstrating how active participation by lecturers can enhance student learning and outcomes. Active lecturers offer advice, assistance, and guidance to their audience. When lecturers actively partake in the knowledge delivery process, students may receive a higher quality, more individualized education. Also, pupils may be more motivated to learn if their lecturers are always accessible. These results demonstrate the significance of lecturers maintaining a high level of concentration, sharing current information, and being available to assist students at any time during the learning process. However, keep in mind that the lecturer's remarks should be pertinent to the students' learning objectives and circumstances. Project-based Learning provides advantages for enhancing lecturers' participation and involvement in Learning. The active participation and contribution of the lecturer to the project-based learning process improves the quality of instruction provided. Lecturers must devise engaging lessons that cater to the needs and interests of their students, utilize a variety of media and technological tools to facilitate their students' learning, and motivate them to work independently and participate actively in class.

#### 5. REFERENCES

- Abd-Mutalib, H., Mustapa, I. R., & Salleh, D. (2019). Enhancing Students' Class Participation through Gamification: Creating Motivational Affordance, Psychological and Behavioral Outcomes. *Universal Journal of Educational Research*, 7(9). <https://doi.org/10.13189/ujer.2019.071604>.
- Aini, Q., Putra, P. O. H., Budiarto, M., & Rahardja, U. (2020). Exploring E-learning Challenges During the Global COVID-19 Pandemic: A Review. *Jurnal Sistem Informatika*, 16(2), 57–65.

- <https://doi.org/10.21609/jsi.v16i2.1011>.
- Anas, M. (2021). Peningkatan Kualitas Pembelajaran Mata Kuliah Akuntansi Biaya Berbasis Lesson Study. *Jurnal Pendidikan dan Dakwah*, 3(ue 2)).
- Aoyagi, K., Ishii, K., Shibata, A., Arai, H., Fukamachi, H., & Oka, K. (2020). A qualitative investigation of the factors perceived to influence student motivation for school-based extracurricular sports participation in Japan. *International Journal of Adolescence and Youth*, 25(1). <https://doi.org/10.1080/02673843.2019.1700139>.
- Apriliani, A. I., & Listyani, L. (2021). Students' Perceptions of English Fun Fair as an Implementation of Project-Based Learning in Speaking for Social Purposes Classes. *Celt: A Journal of Culture, English Language Teaching & Literature*, 20(1). <https://doi.org/10.24167/celt.v20i1.2677>.
- Arfyanti, I., & Rajiansyah, R. (2021). Sistem Pendukung Keputusan Menentukan Kualitas Kinerja Dosen Selama Kuliah Online Menggunakan Promethee II. *JURNAL MEDIA INFORMATIKA BUDIDARMA*, 5(2). <https://doi.org/10.30865/mib.v5i2.2942>.
- Barteit, S., Guzek, D., Jahn, A., Bärnighausen, T., Jorge, M. M., & Neuhann, F. (2020). Evaluation of e-learning for medical education in low- and middle-income countries: A systematic review. *Computers and Education*, 145. <https://doi.org/10.1016/j.compedu.2019.103726>.
- Coleman, L., & Tuck, J. (2021). Understanding student writing from lecturers' perspectives: acknowledging pedagogic complexity to support transformative practices in context. *Studies in Higher Education*, 46(9). <https://doi.org/10.1080/03075079.2019.1711043>.
- Dang, M. H. (2021). Project-Based Learning promotes students' motivation and attitudes. *VNU Journal of Science: Legal Studies*, 37(1). <https://doi.org/10.25073/2588-1167/vnuls.4341>.
- Deeley, S. J. (2018). Using technology to facilitate effective assessment for Learning and feedback in higher education. *Assessment and Evaluation in Higher Education*, 43(3). <https://doi.org/10.1080/02602938.2017.1356906>.
- Divayana, D. G. H., Suyasa, P. W. A., & Widiartini, N. K. (2021). An innovative model as an evaluation model for information technology-based learning at ICT vocational schools. *Heliyon*, 7(2). <https://doi.org/10.1016/j.heliyon.2021.e06347>.
- Eryanto, H., Swaramarinda, D. R., & Marsofiyati. (2020). Evaluation of the entrepreneurial student program at universitas Negeri Jakarta. *International Journal of Scientific and Technology Research*, 9(1).
- Fauji, R. A., & Rahmatulloh, A. (2019). Implementation Of Global Positioning System As A Location Monitoring Media For Final Project Guidelines On Android-Based Applications. *Jurnal Transformatika*, 16(2). <https://doi.org/10.26623/transformatika.v16i2.1071>.
- Feng, L. (2021). Research on Higher Education Evaluation and Decision-Making Based on Data Mining. *Scientific Programming*. <https://doi.org/10.1155/2021/6195067>.
- Fujiya, N. S., RahmahAndansari, I., Widayati, E., & Pratolo, B. W. (2020). The Students' Instructional Feedback; A Tool to Improve Lecturer's Teaching Performance. *Universal Journal of Educational Research*, 8(6). <https://doi.org/10.13189/ujer.2020.080617>.
- Ganefri, M. A., Zakir, S., Jama, J., Wahyuni, T. S., & Adri, M. (2020). Using ADDIE instructional model to design blended project-based Learning based on production approach. *International Journal of Advanced Science and Technology*, 29(6).
- Gnidovec, T., Žemlja, M., Dolenc, A., & Torkar, G. (2020). Using Augmented Reality and the Structure-Behavior-Function Model to Teach Lower Secondary School Students about the Human Circulatory System. *Journal of Science Education and Technology*, 29(6). <https://doi.org/10.1007/s10956-020-09850-8>.
- Hapsari, D. I., & Airlanda, G. S. (2018). Penerapan Project Based Learning Untuk Meningkatkan Motivasi Belajar Matematika Peserta Didik Kelas V. <https://doi.org/10.24252/auladuna.v5i2a4.2018>.
- Harahap, M., Lubis, J., Ikhlas, M., & Anjar, A. (2021). Level of Satisfaction of Online Learning in Mediation Lecturer Competence on Learning Motivation. *BIRCI-Journal*, 4(3).
- Haryudin, A., & Argawati, N. O. (2018). Lesson Study To Improve Student English Grammar Mastery Using Jigsaw Technique To The Third Semester Students Of Ikip Siliwangi. *Indonesian EFL Journal*, 4(1). <https://doi.org/10.25134/ieflj.v4i1.798>.
- Hidayat, D. (2021). The Implementation of Gamification System in Asian Higher Education Teaching. *Journal of Games, Game Art, and Gamification*, 2(1). <https://doi.org/10.21512/jggag.v2i1.7218>.
- Hidayat, T., & Asyafah, A. (2019). Konsep Dasar Evaluasi Dan Implikasinya Dalam Evaluasi Pembelajaran Pendidikan Agama Islam Di Sekolah. *Al-Tadzkiyyah: Jurnal Pendidikan Islam*, 10(1). <https://doi.org/10.24042/atjpi.v10i1.3729>.
- Huang, M., & Yang, R. (2021). Action Research on Project-based Learning and Contest-based Learning in Higher Education. *Proceedings of the 2021 International E-Engineering Education Services*

- Conference. <https://doi.org/10.1109/e-Engineering47629.2021.9470750>.
- Joseph, S., & Olugbara, O. O. (2018). Evaluation of municipal e-government readiness using structural equation modelling technique. *The Journal for Transdisciplinary Research in Southern Africa*, 14(1). <https://doi.org/10.4102/td.v14i1.356>.
- Kaliappen, N., Wan-Ismael, W.-N. A., Ghani, A. B. H. A., & Sulisworo, D. (2021). Wizer.me and Socrative as innovative teaching method tools: Integrating TPACK and Social Learning Theory. *International Journal of Evaluation and Research in Education (IJERE)*, 10(3). <https://doi.org/10.11591/ijere.v10i3.21744>.
- Kautsar, I. A., & Sarno, R. (2019). A supportive tool for project based Learning and laboratory based education. *International Journal on Advanced Science, Engineering and Information Technology*, 9(2). <https://doi.org/10.18517/ijaseit.9.2.7067>.
- Kim, Y. (2021). Effect of projet-based Learning on the creative personality , teamwork competence and self-regulated efficacy of undergraduate nursing students. *Turkish Journal of Computer and Mathematics Education*, 12(10).
- Kulikovskaya, G. (2019). WAYS TO IMPRUE THE EFFICIENCY OF STUDENT-CENTERED LEARNING IN RUSSIAN UNIVERSITIES. *6th SWS International Scientific Conference on Social Sciences ISCSS 2019*, 4. <https://doi.org/10.5593/sws.iscss.2019.4/s13.090>.
- Kurilovas, E. (2019). Advanced machine learning approaches to personalize Learning: learning analytics and decision making. *Behaviour and Information Technology*, 38(4). <https://doi.org/10.1080/0144929X.2018.1539517>.
- Larsen, T., Urke, H. B., Holsen, I., Anvik, C. H., Olsen, T., Waldahl, R. H., Antonsen, K. M., Johnson, R., Tobro, M., Brastad, B., & Hansen, T. B. (2018). COMPLETE - A school-based intervention project to increase completion of upper secondary school in Norway: Study protocol for a cluster randomized controlled trial. *BMC Public Health*, 18(1). <https://doi.org/10.1186/s12889-018-5241-z>.
- Li, Z., & Xiao, H. (2021). Design of visual distance teaching platform based on Internet of things and embedded software system. *Journal of Ambient Intelligence and Humanized Computing*. <https://doi.org/10.1007/s12652-021-03202-z>.
- Lin, T. J. (2021). Exploring the Differences in Taiwanese University Students' Online Learning Task Value, Goal Orientation, and Self-Efficacy Before and After the COVID-19 Outbreak. *Asia-Pacific Education Researcher*, 30(3). <https://doi.org/10.1007/s40299-021-00553-1>.
- Lopez-Gazpio, I. (2022). Gaining Student Engagement Through Project-Based Learning: A Competitive 2D Game Construction Case Study. *IEEE Access*, 10. <https://doi.org/10.1109/ACCESS.2021.3139764>.
- Lu, S. Y., Wu, C. L., & Huang, Y. M. (2022). Evaluation of Disabled STEAM-Students' Education Learning Outcomes and Creativity under the UN Sustainable Development Goal: Project-Based Learning Oriented STEAM Curriculum with Micro:bit. *Sustainability (Switzerland)*, 14(2). <https://doi.org/10.3390/su14020679>.
- Mafruudloh, N., & Fitriati, R. (2020). The Effect Of Project Based Learning To The Students' Speaking Ability. *Celtic: A Journal of Culture, English Language Teaching, Literature and Linguistics*, 7(1). <https://doi.org/10.22219/celtic.v7i1.12203>.
- Martin, F., & Bolliger, D. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning Journal*, 22(1). <https://doi.org/10.24059/olj.v22i1.1092>.
- Masruri, M. (2018). Metode Simulasi Berbasis Project Based Learning Sebagai Alternatif Upaya Meningkatkan Motivasi Dan Hasil Belajar Konsep Mutasi Pada Siswa Kelas Xii Mipa Sma Negeri 1 Moga Tahun Pelajaran 2019/2020. *Perspektif Pendidikan Dan Keguruan*, 11(1). [https://doi.org/10.25299/perspektif.2020.vol11\(1\).4588](https://doi.org/10.25299/perspektif.2020.vol11(1).4588).
- Morales Salas, R. E., Infante Moro, J. C., & Gallardo Pérez, J. (2020). Evaluation of virtual learning environments: A management to improve. *IJERI: International Journal of Educational Research and Innovation*, 126-142(N-e 2386-4303, n. 13), 13.
- Nahdi, K., Sururuddin, M., Uska, M. Z., Fahrurrozi, M., Aswasulasikin, & Utomo, D. P. (2021). Instructional Leadership through Curriculum Coordination: Elementary Learning Continues during COVID-19 in Indonesia. *International Journal of Early Childhood Special Education*, 13(2). <https://doi.org/10.9756/INT-JECSE/V13I2.211064>.
- Ntombela, S. (2020). Teaching and learning support for students with disabilities: Issues and perspectives in open distance e-learning. *Turkish Online Journal of Distance Education*, 21(3). <https://doi.org/10.17718/TOJDE.761919>.
- Nugroho, B. H. (2019). Efek pembelajaran kooperatif dalam proses pembelajaran dan pencapaian tujuan pembelajaran pada mata kuliah pharmaceutical engineering. *Refleksi Pembelajaran Inovatif*, 1(2).



- <https://doi.org/10.20885/rpi.vol1.iss2.art4>.
- Okoye, K., Arrona-Palacios, A., Camacho-Zuñiga, C., Hammout, N., Nakamura, E. L., Escamilla, J., & Hosseini, S. (2020). Impact of students evaluation of teaching: a text analysis of the teachers qualities by gender. *International Journal of Educational Technology in Higher Education*, 17(1). <https://doi.org/10.1186/s41239-020-00224-z>.
- Palinggi, H., & Tambunan, W. (2021). Analisis Sistem Manajemen Pembelajaran Tatap Muka Pada Masa Pandemi Covid-19 Di Sma Kristen Rantepao. *Jurnal Manajemen Pendidikan*, 10(1). <https://doi.org/10.33541/jmp.v10i1.3263>.
- Pan, G., Shankararaman, V., Koh, K., & Gan, S. (2021). Students' evaluation of teaching in the project-based learning programme: An instrument and a development process. *The International Journal of Management Education*, 19(2). <https://doi.org/10.1016/j.ijme.2021.100501>.
- Penuel, W. R., Reiser, B. J., McGill, T. A. W., Novak, M., Horne, K., & Orwig, A. (2022). Connecting student interests and questions with science learning goals through project-based storylines. *Disciplinary and Interdisciplinary Science Education Research*, 4(1). <https://doi.org/10.1186/s43031-021-00040-z>.
- Pienimäki, M., Kinnula, M., & Iivari, N. (2021). Finding fun in non-formal technology education. *International Journal of Child-Computer Interaction*, 29. <https://doi.org/10.1016/j.ijcci.2021.100283>.
- Povedano, R., Salgado, A. P., Souza, M. A. A., & Rebehy, P. C. P. W. (2021). Indicators and goals for school performance evaluation: a two-stage DEA\* analysis of the Ideb of municipal public schools. *Ensaio*, 29(113). <https://doi.org/10.1590/S0104-40362021002902760>.
- Prasetyo, D., Wibawa, B., & Musnir, D. N. (2020). Development of Mobile Learning-Based Learning Model in Higher Education Using the Addie Method. *Journal of Computational and Theoretical Nanoscience*, 17(2). <https://doi.org/10.1166/jctn.2020.8740>.
- Prihatin, A., Sudiyanto, -, & Joebagio, H. (2018). Developing Formative Evaluation Model to Improve Students' Learning Outcome at Vocational High Schools. *International Journal of Multicultural and Multireligious Understanding*, 5(5). <https://doi.org/10.18415/ijmmu.v5i5.377>.
- Pujiastuti, I. (2021). Impementasi Project Based Learning Dalam Pembelajaran Abad 21 Pada Mata Pelajaran Geografi Kelas XI IPS SMA Nasional 3 Bahasa Putera Harapan Purwokerto. *Proceedings Series on Social Sciences & Humanities*, 1. <https://doi.org/10.30595/pssh.v1i.66>.
- Puspasari, M. D., Fahrudin, A., & Bariyah, N. O. N. (2022). Prophetic based transformational leadership in educational institutions. *Technium Social Sciences Journal*, 27. <https://doi.org/10.47577/tssj.v27i1.5379>.
- Rido, A., Kuswoyo, H., & Ayu, R. (2020). Interaction Management Strategies in English Literature Lectures in Indonesian University Setting. *Indonesian Journal of EFL and Linguistics*, 5(2). <https://doi.org/10.21462/ijefl.v5i2.286>.
- Ruslan, M. S. H., Bilad, M. R., Noh, M. H., & Sufian, S. (2021). Integrated project-based learning (IPBL) implementation for first year chemical engineering student: DIY hydraulic jack project. *Education for Chemical Engineers*, 35. <https://doi.org/10.1016/j.ece.2020.12.002>.
- Rusmanto, R., & Rukun, K. (2020). The Development of E-Learning Module Based on Project-Based Learning (PjBL) for Electric Motor Installation Course. *Journal of Education Research and Evaluation*, 4(2). <https://doi.org/10.23887/jere.v4i2.24608>.
- Sathappan, R., & Gurusamy, P. (2021). The Benefits of Project-based Language Learning: A Case Study in a Malaysian Secondary School. *JOURNAL OF SOCIAL SCIENCE RESEARCH*, 17. <https://doi.org/10.24297/jssr.v17i.8970>.
- Setyawan, D., Permana, T. I., & Latifa, R. (2019). Lesson study for learning community: A way of collegial participation of teachers and lecturers. *JURNAL BIOEDUKATIKA*, 7(1). <https://doi.org/10.26555/bioedukatika.v7i1.11936>.
- Subaidi, S., Sudarmaji, S., Nasuka, M., & Munasir, M. (2021). The Implementation of Human Resource Management in Improving the Quality of Teacher's Learning. *Nidhomul Haq : Jurnal Manajemen Pendidikan Islam*, 6(3). <https://doi.org/10.31538/ndh.v6i3.1554>.
- Susilowati, Y. (2020). The relationship between students, attitudes toward lecturer teaching methods and learning environment with achievement motivation (descriptive study of management students of Stie Dharma Agung. *Universal Journal of Educational Research*, 8(3 A). <https://doi.org/10.13189/ujer.2020.081409>.
- Tam, M. (2018). Evaluation of third age learning in Hong Kong: Why and how? *Educational Gerontology*, 44(11). <https://doi.org/10.1080/03601277.2018.1555208>.
- Tirtanawati, M. R., & Prastiwi, C. H. W. (2022). Evaluation of LMS Moodle Use in English Literature Classes. *Ideas: Jurnal Pendidikan, Sosial, Dan Budaya*, 8(1). <https://doi.org/10.32884/ideas.v8i1.569>.

- Ulker, N. (2021). How can student evaluations lead to improvement of teaching quality? A cross-national analysis. *Research in Post-Compulsory Education*, 26(1). <https://doi.org/10.1080/13596748.2021.1873406>.
- Wahjusaputri, S., Khuwarizmi, F. R., & Priyono, D. (2021). Online Learning Program Evaluation to Improve the Education Quality in Primary School. *AL-ISHLAH: Jurnal Pendidikan*, 13(3). <https://doi.org/10.35445/alishlah.v13i3.659>.
- Witt, T., Klumpp, M., & Beyer, B. (2021). Digital university teaching and Learning in management—the gini from the covid-19 bottle and its empirical representations in germany. *Education Sciences*, 11(11). <https://doi.org/10.3390/educsci11110728>.
- Yacub, J. (2021). Pendampingan Penerapan Manajemen Pembelajaran Berbasis Multiple Intelligences Di Sma Kecamatan Way Jepara Kabupaten Lampung Timur. *As-Salam: Jurnal Studi Hukum Islam & Pendidikan*, 10(1). <https://doi.org/10.51226/assalam.v10i1.237>.
- Yuan, M., Xiao, X., Wang, Y., Han, Y., Zhang, R., Fu, H., & Fang, Y. (2021). Design and evaluation of a cognitive health education pilot program according to the RE-AIM framework. *PLoS ONE*, 16(12 December). <https://doi.org/10.1371/journal.pone.0260934>.
- Yuliana, Y., Putra, M. J. A., & Antosa, Z. (2020). Faktor-Faktir Yang Mempengaruhi Motivasi Siswa Sekolah Dasar Dalam Mengikuti Aktivitas Pramuka Penggalang. *Tunjuk Ajar: Jurnal Penelitian Ilmu Pendidikan*, 3(2). <https://doi.org/10.31258/jta.v3i2.210-226>.
- Yusof, N., Awang-Hashim, R., Kaur, A., Malek, M. A., Shanmugam, S. K. S., Manaf, N. A. A., Yee, A. S. V., & Zubairi, A. M. (2020). The role of relatedness in student learning experiences. *Asian Journal of University Education*, 16(2). <https://doi.org/10.24191/AJUE.V16I2.10308>.
- Zayyinah, E., Supardi, Z. A. I., Hariyono, E., & Prahani, B. K. (2022). STEAM-Integrated Project Based Learning Models: Alternative to Improve 21st Century Skills. *Advances In Social Science, Education and Humanities Research*, 627, 251–258. <https://doi.org/10.2991/assehr.k.211229.039>
- Zulaihah, S., & Harida, R. (2017). Autonomous Learning Strategy Of The Successful Nontraditional Students. *ELTIN JOURNAL, Journal of English Language Teaching in Indonesia*, 5(2). <https://doi.org/10.22460/eltin.v5i2.p71-84>.