



Integrating PjBL and service-learning to improve 21st-century skills in tourism education

Rosita¹, Armandha Redo Pratama², Erry Sukriah³, Rudi Susilana⁴, Rusman⁵

^{1,2,3,4,5}Universitas Pendidikan Indonesia, Bandung, Indonesia

rosita1019@upi.edu¹, armandharedo@upi.edu², erry_sukriah@upi.edu³, rudi_susilana@upi.edu⁴, rusman@upi.edu⁵

ABSTRACT

Students must master 21st-century skills in preparation for success in a digital society. The development of these skills is closely related to deep learning, such as analytical reasoning, problem-solving, and teamwork. Learning models such as PjBL and service-learning are two constructivist learning models that have the potential to improve student learning outcomes in all cognitive, affective, and psychomotor aspects. This research aimed to assess tourism students' learning outcomes in these three aspects in one of the courses that integrate PjBL and service-learning. The assessment results showed optimal learning outcomes in all three aspects of competency. These findings support the results of previous studies regarding the effectiveness of using PjBL and service-learning. Achieving optimal learning outcomes using these two learning models requires teachers who are ready to be open to changes in teaching practices, and flexible in planning students' learning experiences. However, there are still several significant obstacles in the implementation process that need further research.

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ABSTRAK

Keterampilan abad 21 harus dikuasai siswa sebagai persiapan untuk sukses dalam masyarakat digital yang berubah cepat. Pengembangan keterampilan ini terkait erat dengan pembelajaran mendalam, seperti penalaran analitik, pemecahan masalah, dan kerja tim. Model pembelajaran seperti PjBL dan service-learning merupakan dua model pembelajaran konstruktivis yang memiliki potensi meningkatkan capaian pembelajaran siswa di semua aspek kognitif, afektif, dan psikomotorik yang mendukung keterampilan abad 21. Penelitian ini bertujuan mengevaluasi capaian pembelajaran mahasiswa di ketiga aspek tersebut pada mata kuliah yang menerapkan penggabungan PjBL dan service-learning di Program Studi Manajemen Resort & Leisure, Universitas Pendidikan Indonesia. Hasil evaluasi menunjukkan capaian pembelajaran yang optimal di ketiga aspek kompetensi. Mahasiswa mampu mencapai tingkat teratas capaian pembelajaran baik pada aspek kognitif, afektif, maupun psikomotorik. Hal ini berarti pencapaian yang diperlukan pada tingkat yang lebih rendah pun telah berhasil dicapai. Meskipun demikian, pencapaian learning outcome yang optimal menggunakan kedua model pembelajaran ini membutuhkan pengajar yang siap bersikap terbuka terhadap perubahan dalam praktik pengajaran, dan fleksibel dalam merencanakan pengalaman belajar siswa.

Kata Kunci: capaian pembelajaran; pendidikan pariwisata; project-based learning; PjBL; service-learning

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rosita1019@upi.edu

INTRODUCTION

Higher education institutions are trying to equip their students with hard skills in the form of cognitive knowledge, professional skills, and soft skills, such as collaboration skills, teamwork, and problem-solving. In this case, students can participate in real problem solving and knowledge construction in authentic professional contexts. At the higher education level, the imbalance between the development of research skills versus professional skills has long been a problem. This can lead to a gap between what students learn at university and what they need in the workplace (Garousi *et al.*, 2020). The skills needed in the industrial world are sometimes not possessed by students when they graduate and enter the workforce. This gap may be caused by differences in the expectations of the industrial world and the competencies possessed by students. Case studies on teaching interpersonal skills show that company managers strongly associate interpersonal skills with job performance, especially for new graduates (Manevska *et al.*, 2018). Their success depends on their ability to listen, understand, communicate, and problem solve. The gap between the competencies acquired in educational institutions and the competencies required by the world of work needs to be bridged through collaboration with industry in reviewing existing curricula and programs, especially in improving the five highest-ranking skills, namely collaboration, self-motivation, verbal communication, problem solving, and proactive attitude (McGunagle & Zizka, 2020).

This gap problem also occurs in tourism study programs, especially at the undergraduate level. Until now, the issue related to the relevance of the curriculum of undergraduate tourism study programs and the needs of the industrial world is still ongoing. Airey and Tribe in a book entitled “*An International Handbook of Tourism Education*” menjelaskan bahwa awalnya kurikulum pariwisata di perguruan tinggi memang sangat berorientasi kejuruan. Along the way, various thoughts emerged regarding balancing vocational and academic orientation (Basri, 2021; Dredge *et al.*, 2012). This thought emerged because the field of tourism science, as a newcomer in the academic world, was still establishing itself to prove its academic credentials. This has implications for putting pressure on research and theory. On the other hand, the field of tourism science also seeks to maintain genuine relationships with industry and its potential world of work. After going through more than five decades of development, the debate about the balance between skills and knowledge remains relevant in many studies on tourism curriculum (Alexakis & Jiang, 2019; Bilsland *et al.*, 2020; Sándorová *et al.*, 2020).

One possible way to bridge the gap is through project-based learning (PjBL). Krajcik and Czerniak, in a book entitled “*Teaching Science in Elementary and Middle School: A project-based learning Approach*,” explain that PjBL refers to an inquiry-based learning method that involves students constructing knowledge by completing meaningful projects and developing real-world products. As a learning model, PjBL not only aims to acquire knowledge in a particular field, but is a model that targets and produces various learning outcomes. In other words, achieving learning outcomes in the cognitive, affective, and psychomotor domains is the overall achievement target.

Several studies have shown that PjBL benefits students' cognitive achievement, psychomotor achievement, affective achievement, motivation, and product quality (Almulla, 2020; Chen & Yang, 2019; Mou, 2019). However, more experimental research is still needed to determine the benefits of PjBL on diverse student learning outcomes (Guo *et al.*, 2020). In the three learning models of Problem-based Learning (PBL), Project-based Learning (PjBL) and Challenge-based Learning (CBL), one of the effective ways of implementing PjBL is through direct experience and close collaboration with industry partners, conducting organized observation visits, and providing opportunities for students to join projects run by partners (Sukacké *et al.*, 2022). Considering the research findings above, this study aims to contribute to a more effective form of PjBL implementation in higher education. This case study of PjBL implementation combined with service-learning in an undergraduate tourism study program will assess the achievement of student learning outcomes in learning related to sustainable tourism.

The Consulting Project course is part of the study program expertise course given to students of the Resort and Leisure Management Study Program (MRL Study Program) in the fourth semester. This course is worth four (4) credits and is taught by a team of four lecturers. In this course, students can apply the knowledge and skills they have learned through practice. Students will be involved in teamwork to solve problems related to tourism planning, development, and management, and present the analysis results to invited stakeholders (Satya & Tejaningrum, 2023). Students must participate effectively in group discussions, class activities, and group projects. This course aims to improve professional competence in tourism planning, development, management consulting, and career readiness. The learning outcomes or learning achievements of the course (CPMK) are intended, namely, students can: 1) describe the contents of each stage of needs analysis, program design, development, implementation, and program evaluation in the form of a written report, 2) conduct a needs analysis to design a sustainable tourism program design in a tourist village, 3) develop a program design and implement it in the form of a program trial, 4) evaluate the results of the program trial, 5) present the results of the program to the client.

This study aims to evaluate students' learning outcomes in courses that integrate PjBL and service-learning in the MRL Study Program, Universitas Pendidikan Indonesia. In the even semester lectures of the 2022-2023 academic year, the lecturers proposed combining learning in the Consulting Project Course with community service activities. This idea emerged because of a policy that changed the service course, also known as Kuliah Kerja Nyata (KKN), which was originally mandatory to become part of the independent learning program, but is now optional. Implementing the PjBL model to achieve the targeted learning outcomes of this course also allows the idea of the merger to be implemented. For this reason, the study program has partnered with Dinas Pariwisata dan Olahraga (Disparpora) Subang Regency as the project client and four pioneering tourist villages recommended by the office as communities receiving the community service program. The four tourist villages are: Kasomalang Kulon Village, Sukamandi Village, Cirangkong Village, and Sidajaya Village. The integration of learning models in this course also targets learning outcomes: understanding cultural differences, social responsibility as citizens, and a commitment to serving.

LITERATURE REVIEW

PjBL Learning Model

Duffy and Cunningham in the book *"Constructivism: Implications for the Design and Delivery of Instruction"* defines that project-based learning (PjBL) is a learning model based on a constructivist learning approach, which requires the construction of knowledge with various perspectives, in social activities, and allows self-awareness in learning and knowing while still depending on the context. Krajcik and Shin, in the book *"The Cambridge Handbook of the Learning Sciences,"* show six advantages of PjBL, including provocative questions, focus on learning objectives, participation in educational activities, collaboration between students, use of scaffolding technology, and creation of authentic artifacts. Creating or working in PjBL requires students to work together to find solutions to authentic problems in integrating knowledge, application, and construction. Teachers and stakeholders involved, usually as facilitators, can provide feedback and support for students to help their learning process.

Evidence of the potential of PjBL to improve learning outcome achievement and student motivation levels has been documented in many previous studies that identified the effectiveness of using PjBL by comparing it with direct instruction learning on the creative thinking abilities of secondary school students (de Oliveira-Biazus & Mahtari, 2022). The results show that the PjBL model significantly improves the creative thinking skills of high school students. PjBL has the potential to foster intrinsic motivation and develop various abilities and skills to be a means for each student to achieve success (Wolk, 1994). Other studies also show that using e-media-based PjBL strategies is effective and significantly improves science process skills and learning motivation of elementary school students (Safaruddin et al., 2020). In PjBL,

students gain knowledge and skills through various activities and aspects. In addition, attitudes to act in a certain way, such as self-esteem and self-confidence, also develop. Students' interest, critical thinking skills, presentation and communication skills, and the ability to work effectively in teams increase when they work on PjBL activities (Baran *et al.*, 2021)..

PjBL has a more positive impact on students' academic achievement than traditional learning (Berlian *et al.*, 2024; Chen & Yang, 2019; Fahlevi, 2022). Traditional learning is considered less able to develop students' critical thinking skills, problem-solving, and decision-making because it relies heavily on repetition and memorization. Among all the advantages of PjBL, creating artifacts that solve authentic problems is the most important, distinguishing PjBL from other student-centered pedagogies, such as problem-based learning. Portfolios in the form of research papers, products, and exhibitions produced in PjBL activities show students' ability to move from beginners to experts in a field of knowledge, and that they integrate some of their learning abilities in production (Rohm *et al.*, 2021). In addition, other studies have shown that students who learn through PjBL do not limit themselves to reporting facts but try to interpret information, are more motivated to work together in their presentations, and show a more positive attitude towards learning (Zhang & Ma, 2023). In more detail, both revealed that project-based learning is usually oriented towards real-life problems, requiring students to integrate knowledge and skills from various disciplines, combining theoretical knowledge with practice and developing students' creative thinking skills and comprehensive application skills. While implementing the project, group members divide the work and work together to identify problems. After the project is completed and presented, the teacher provides feedback and evaluation to influence students' attitudes.

Service-learning

As a constructivist learning model, PjBL requires social learning experiences that involve group work. On the same side, universities are encouraged to become more involved with the surrounding community to help meet local needs and problems. One way to increase this involvement is through learning strategies that facilitate students to gain direct learning experiences in the community. Such learning experiences can be formed through ongoing partnerships between universities and community organizations or communities (Cahyana, 2018; Setyowati & Permata, 2018). One of the learning models used in this partnership is service-learning, or learning in the form of community service. According to Bringle and Hatcher in the book "*International Service Learning: Conceptual Frameworks and Research*", Service learning is a learning experience in which students can participate in organized service activities to meet identified community needs, and students can reflect on their activities in such a way as to gain further understanding of the content of their learning, broader appreciation, discipline, and an increased sense of responsibility as citizens. The constructivist learning model has benefits and advantages in improving student skills. Constructivism stimulates and engages students by basing learning activities on authentic, real-world contexts, giving them ownership of what they learn. Service learning helps promote social and communication skills by creating a learning environment emphasizing collaboration and exchanging ideas (Ahmadi, 2023). Students must learn to articulate their ideas clearly and collaborate and share with their group and partners. Students also learn to negotiate with others and evaluate their contributions in socially acceptable ways (Bali, 2017; Said *et al.*, 2021). This is essential for success in the real world, as they will be constantly exposed to experiences where they must collaborate and navigate other people's ideas.

Building partnerships with the community is also a process of developing students, educators, and institutions. Bringle and Hatcher, in their book, also mention that when teachers expand their classrooms to the community through service-learning, partnerships with the community become the most fundamental aspect of the success of this learning model. Although research on learning and pedagogy continues to grow, research on the fundamental part of service-learning, such as how to implement service-learning, is still minimal. This study attempts to fill this gap through a case study on learning

achievement that combines this learning model with the PjBL model, which is held simultaneously in one course in an undergraduate tourism study program.

METHODS

The case study in this research was conducted at Program Studi Resort and Leisure Management(MRL Study Program), Universitas Pendidikan Indonesia, located in Bandung City, West Java, Indonesia. Learning that combines PjBL and service-learning in one course package called Consulting Project is worth four credits. It has been implemented in the even semester of the 2022-2023 academic year for fourth-semester MRL Study Program students. Participants in this study were four lecturers who taught the course, two of whom were research team members, and all students involved were 89 people.

Students are divided into 16 teams, each comprising five to six students. Each team will join one village, accompanied by one lecturer. Each team in each village will design a different project, develop, implement, and evaluate it. Adjusting the recommendations and needs of the Subang Regency Disparpora as the client, each village's project includes projects to improve the quality of tourism human resources, develop tourism activities and creative products, and digital marketing. The division of project teams can be seen in **Table 1**. The assessment in this course is in the form of an oral presentation assessment (20%), a project report (30%), self and peer assessment (10%), user assessment (10%), and product results (30%).

Table 1. Division of Consulting Project Team

Villages	Lecturers	Teams	Project areas of each village
Kasomalang Kulon	Rosita	Tim 1-4	Peningkatan SDM;
Sukamandi	Sri Marhanah	Tim 5-8	Aktivitas wisata;
Cirangkong	Gilang Nur Rahman	Tim 9-12	Produk Kreatif;
Sidajaya	Armandha Redo	Tim 13-16	Pemasaran Digital.

Source: Research 2023

The design of this study is based on a qualitative approach. The forms of qualitative data to be collected in this study will be grouped into four basic types of information: observation, interviews, documents, and audiovisual materials. Quantitative data is taken from the lecturer's quantitative assessment document. For data analysis, descriptive statistical analysis and content analysis were carried out to identify data based on themes related to the achievement of learning outcomes. Other categories were also identified, such as obstacles faced by lecturers and students in implementing PjBL and service-learning, but will not be discussed in detail. Recurring topics and contrasting patterns among participant perceptions were carefully analyzed to identify important subcategories that will be defined.

RESULTS AND DISCUSSION

Learning Outcome Achievement

1. Cognitive Aspect

In four face-to-face meetings (4x120 minutes) at the beginning of the lecture, students were first provided with knowledge related to project management, event management, tourism village management, and the profiles and characteristics of four pioneering tourism villages that would be

developed. In this initial lecture, four relevant speakers were presented from academics, practitioners, and the government, in this case, the Subang Regency Tourism and Sports Office. Furthermore, each group prepared an activity plan for each project stage and reported it to the project supervisor for review. At the end of the project activity, each group was asked to submit a project report, including the activity plan, implementation, and evaluation. In addition to the report, students also made oral presentations in front of lecturers, the office, and representatives from each village.

In the cognitive aspect, each lecturer assesses the planning process, implementation and evaluation of project activities, project reports and oral presentations of each group they supervise based on Anderson & Krathwol's Taxonomy starting from the level of understanding (understand), application (apply), analysis (analyze), evaluation (evaluate), and production (create) which each use a scale of 1 to 3 as in the assessment scheme in Table 2 below:

Table2. Cognitive Aspect Assessment Format

Aspect	Description	Evaluation
Understanding	understand the knowledge gained, connecting new knowledge with past knowledge or experience	(1) not yet able to arrange a series of activities according to their stages (2) Some activities are not according to their stages (3) All activities are according to their stages
Application	perform tasks or solve problems through procedures.	(1) not yet able to implement the activity plan in a structured and systematic manner (2) Several problems in implementing the activity plan have not yet been resolved (3) able to implement the activity plan and resolve problems that occur well
Analysis	Break down and analyze each knowledge component and show the relationship between the parts and the whole.	(1) not yet able to connect the role and function of each activity in each stage (2) Several activities in each stage are not yet functionally connected (3) able to connect the role and function of each activity in each stage
Evaluation	assess and evaluate based on criteria and standards.	(1) not yet able to assess and evaluate based on criteria and standards (2) still need help from lecturers to assess and evaluate based on the criteria and standards (3) able to assess and evaluate based on criteria and standards independently
Creation	uniting different elements to form a complete and functional whole.	(1) not yet able to arrange the elements that are worked on to form a complete, functional product (2) still need help from lecturers to be able to arrange the elements that are worked on to form a complete, functional product (3) able to arrange each element that is worked on to form a complete, functional product

Source: Research 2023

During the learning process, during the project's planning, implementation, and evaluation, the lecturer assessed that the students' need for mentoring, guidance, and correction gradually decreased. This means that motivation and self-awareness in independent learning increased. The written report also

describes the optimal abilities of all groups on a scale of 3 in the aspects of understanding, application, and analysis. Meanwhile, in the evaluation aspect, all student groups still need guidance from the lecturer, especially in using an evaluation approach that refers to the criteria and techniques for conducting evaluations correctly. This happens because students have never received material related to the evaluation approach in previous courses. So, it was only in this course that students directly learned and applied it. In the aspect of creation, all groups were able to achieve a scale of 3 because the products produced in the form of a training program to improve the quality of tourism human resources, tourism activity packages, creative tourism products, and digital marketing media for each village could be used and received excellent appreciation from clients. High-level thinking skills at this level of creation demonstrate students' ability to connect information stored in memory with new information, gain a deep understanding of it, and apply it to different contexts to find solutions to the problems faced.

2. Affective Aspect

The assessment of this aspect has a relatively small weight (10%), but it is an aspect that is expected to develop sustainably in the long term. This form of assessment is in the form of self-assessment and also peer assessment on a scale of 1 (less agree), 2 (agree), and 3 (strongly agree) related to the five aspects of the Krathwohl, Bloom, and Masia affective taxonomy, namely acceptance, response, appreciation, organization, and characterization as described in **Table 3** below:

Table 3. Percentage of Self-assessment and Peer-assessment Results

Aspect	Statement	1		2		3	
		Self	Peer	Self	Peer	Self	Peer
Acceptance	I/my colleagues and I recognize that rural environments present different challenges and require appropriate responses.	0%	0%	0%	2%	100%	98%
Response	My colleague/I am interested in knowing more about the challenges of developing tourism in pioneering tourist villages.	0%	3%	3%	64%	97%	33%
Award	I/my colleagues and I are increasingly committed to developing tourism in pioneering villages.	0%	3%	2%	55%	98%	42%
Organizing	My colleague and I are trying to conceptualize new values within ourselves to realize our commitment to developing a pioneering tourist village.	0%	3%	4%	32%	96%	65%
Characterization	I/my colleagues and I have decided to remain consistent in trying to contribute knowledge, thoughts, and energy in developing tourist villages towards national development.	0%	3%	1%	58%	99%	39%

Source: Research 2023

The data above shows the percentage of self-assessment on a scale of 1 to 0% on all statements. On the other hand, the assessment on a scale of 3 shows a very high percentage, even reaching 100% on acceptance. This shows that almost all students are subjectively able to accept, respond, appreciate, organize, and make their learning experiences a character. However, there is a difference in peer assessment where the aspects of response, appreciation, organization, and characterization on a scale

of 1 show a percentage of 3%, and the percentage on scales 2 and 3 vary quite a bit from 2% to 98%. This percentage shows the tendency of students to give peer assessments on a more neutral scale based on the results of observations, interactions, and communication between them. However, the data still shows high acquisition of the five affective aspects on scales 2 and 3.

2. Psychomotor Aspects

In the psychomotor aspect, quantitative assessments were not carried out per individual but rather qualitatively per group in the form of written comments from the supervising lecturer. The assessment of this aspect includes five levels of Dave's psychomotor taxonomy: imitation, manipulation, precision, articulation, and naturalization. Of the 16 groups assessed, nine groups have been able to reach the naturalization level, and seven other groups were assessed as only at the articulation stage.

At the imitation level, all groups could carry out the requested instructions, such as determining the group leader, preparing an activity plan, preparing a description, and distributing tasks for each group member. At the manipulation level, all groups could carry out the project planning stage based on what they had learned during the material briefing and through independent learning. Some brief comments given by the lecturers include: student groups were able to conduct needs analysis and prepare project designs with minimal direction from the lecturer; student groups were able to prepare needs analysis instruments and analyze the data obtained independently; students were able to prepare project designs based on the results of the needs analysis; student groups were able to apply their knowledge related to project planning.

Meanwhile, at the precision level, the entire student group could independently complete the tasks their group had planned when they were deployed to the field. At this stage, students were no longer accompanied by lecturers when completing their tasks; the lecturers were only tasked with monitoring. From the monitoring results, the lecturers assessed that the entire group had reached the articulation level where students could face various problems and challenges in implementing the project design by determining for themselves what steps they should take. Although not all groups were assessed as able to reach the naturalization level, most (nine groups) were assessed as able to. Assessment at this level was carried out at the project's evaluation, reporting, and presentation stages. The nine groups assessed as being able to reach this level were at least able to demonstrate competence in terms of: 1) verbally explaining each stage that had been carried out in detail and also reporting it in writing; 2) being able to describe the results of the project evaluation well and showing products that had been refined from the results of the evaluation; and 3) answering client questions well when presenting the project results. The seven groups that had not mastered one or two of the above skills were assessed as unable to reach the naturalization level.

The assessment results of the three aspects of learning outcomes above illustrate how students can achieve the three aspects optimally as expected through the combination of PjBL and service learning. The optimality of this achievement cannot only be seen from the measurement indicators set in the assessment, but also from many other indicators that have not been measured, such as the acquisition of knowledge in various fields other than project management. In this case, students learn about developing training media, information technology, and graphic design. In addition, various soft skills are also developed, including the development of attitudes in acting in a certain way, self-confidence, working effectively in a team, and good social communication. The creation process in this PjBL model also encourages students to participate and collaborate in teams to find the best solutions to real problems in the field. The experience of social learning through service learning also optimizes students' intrinsic motivation to commit to building society. The results of this learning experience are apparent after the

learning activities are completed. Students take the initiative to continue collaborating with the village to develop the potential that exists in various forms of student service activities.

Obstacles during the Learning Process

Optimizing the achievement of learning outcomes that refer to 21st-century skills through the PjBL model or service learning has been widely documented in several studies, especially those comparing it with conventional learning models (Issa & Khataibeh, 2021; Rimm-Kaufman *et al.*, 2021). Both found significant differences from the control class using the conventional model and the experimental class using the PjBL or service-learning model. Previous studies found the effectiveness of using the PjBL model in achieving learning outcomes oriented to 21st century skills in different fields of study. So, this study's results support previous studies' results (Priyatni & As'ari, 2019). However, several obstacles during the learning process using these two models have not been widely noticed regarding the learning outcomes. In this case, the researcher identified several obstacles that were considered significant and required further research to find solutions.

First, compared to passive learning models where students only receive knowledge transfer from lecturers, the demands of project work in PjBL and service-learning become quite a heavy workload for students. The weight of 4 credits for this course is considered too little because the project work is not limited by a specific time, like studying in class. In addition to time, this learning model also takes a lot of energy and funds from the student's side. The burden is made even heavier by the assignments from other courses that must be completed. Second, some students feel dissatisfied with the group assessment system because it is seen that each group member's work is not always evenly distributed. Individual assessment based on each person's performance is considered ideal. Third, lecturers must be able to function as educators and mediators of partnerships between study programs and other institutions outside of higher education. This requires the team of lecturers to work together with partners long before the learning period begins, especially in discussing the alignment of partner needs and learning objectives to be achieved. Planning, implementing, and evaluating projects in service-learning can be complicated because it involves several parties and aims to meet the needs of all, both implementers and partners receiving their services (Zhang *et al.*, 2011). Fourth, lecturers must be flexible towards the dynamics that arise while encouraging the development of a learning environment that challenges students' critical thinking. This ability is a separate obstacle because not all lecturers in the team have enough expertise to train students to conduct good investigations, or because the existing dynamics allow students to explore areas that lecturers do not necessarily master.

CONCLUSION

Project-based learning (PjBL) and community service learning or service-learning are two learning models that have the potential to optimize student learning outcomes in higher education. A case study in the MRL Study Program, Universitas Pendidikan Indonesia on the integration of these two learning models shows the achievement of optimal learning outcomes in all aspects, both cognitive, affective and psychomotor. However, this achievement requires learning planning and preparation of teachers in facing dynamics during the learning process. In addition, active involvement of partners is also needed so that the projects implemented can become community service activities that are beneficial for both parties. The integration of two different learning models that can mutually support the success of learning, especially in higher education, needs to be done. In addition to optimizing the achievement of learning outcomes, it is also to activate the creativity and research power of teachers in developing and implementing various effective learning strategies.

AUTHOR'S NOTE

The author declares that there is no conflict of interest regarding the publication of this article. The author confirms that the data and content of the article are free from plagiarism..

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