

Application of the Discovery Learning Model for Physical Education Teachers

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Abstract

This community service activity aims to provide information and guidance to Physical Education, Sports, and Health (PJOK) teachers in Indralaya, Ogan Ilir, regarding the application of the discovery learning model in the PJOK learning process. The partner for this activity is the Indralaya PJOK Subject Teacher Working Group (MGMP), comprising 40 teachers. The method was carried out with a participatory approach through outreach, workshops, and practical training accompanied by mentoring. This program aims to improve the competence of Physical Education, Sports, and Health teachers in implementing the discovery learning model that aligns with the principles of student-centered learning in the independent curriculum. Pre-test and post-test data were analyzed descriptively and quantitatively by comparing the average scores before and after the activity, while teacher reflection data were analyzed descriptively and qualitatively to strengthen the interpretation of the quantitative results. The results of the activity showed that before the socialization, 63.6% of teachers did not fully understand the discovery learning model, and only 36.4% had tried to apply it, although they still experienced difficulties in implementing the learning project. After the dissemination and guidance activities, the teachers' understanding increased significantly, with 100% of participants stating that they understood and were able to apply the discovery learning concept in PJOK learning. This activity had a positive impact on improving the pedagogical competence of PJOK teachers in Indralaya Ogan Ilir, particularly in the application of innovative learning models to improve the quality of student learning outcomes.

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INTRODUCTION

Learning is an interaction between students, educators, and learning resources so that educational success can be achieved ([Bende et al., 2021](#)). Learning takes place through interaction with each other, discussing material using references ([Aryanti et al., 2020](#)). The use of learning models in today's education is very important. Learning models are applied to suit the learning needs at each level of education ([Pakpahan & Fitriani, 2020](#)). Educators become creative in presenting material by using technology that is tailored to the education being taught ([Aisa & Lisvita, 2020](#)). The application of learning models in physical education is expected to increase student attention, enthusiasm, and motivation to

participate in physical education learning activities, as well as to obtain benefits in the form of values embedded in the learning process, especially attitudinal values.

However, in practice, many physical education teachers lack a comprehensive understanding and pedagogical readiness to implement this model contextually, in accordance with the characteristics of the subject and the limitations of school facilities and infrastructure. Existing teacher professional development activities generally focus on contextual aspects, without ongoing technical and reflective mentoring, resulting in low implementation of innovative learning models in the classroom. The novelty of this community service activity lies in its integrated mentoring approach, which combines concept socialization, direct practice, and reflective mentoring based on the real needs of PJOK teachers in Indralaya, Ogan Ilir. This approach not only aims to improve teachers' understanding of discovery learning but also to build implementation readiness and uniformity of pedagogical understanding as a foundation for implementing student-centered PJOK learning that aligns with the independent curriculum.

The application of learning models in physical education is expected to increase students' attention, enthusiasm, and motivation to participate in physical education activities, as well as to foster the acquisition of values embedded in the learning process, especially attitudinal values. [Dupri et al. \(2021\)](#) explained that discovery learning is a learning model and teaching method that is still teacher-centered, thus limiting the space for students to develop their creative thinking skills, which have the potential to directly impact the learning process. Learning through the discovery learning model can enhance students' creative thinking through the use of video-based learning media, which is intended to increase student enthusiasm in the learning process ([Hidayat & Sujarwo, 2022](#)). [Mustofa et al. \(2024\)](#) revealing that discovery learning is based on its application in the classroom; the main source of scientific information is not the teacher but other easily accessible sources for students. Learning resources that students can access flexibly include Google Sites.

Furthermore, implementing the Discovery Learning model can improve teachers' pedagogical competence by encouraging intensive two-way interaction through discussion, collaboration, and active participation between teachers and students in the learning process. However, the effectiveness of this model is highly dependent on teachers' conceptual understanding and skills in systematically managing the learning stages. Therefore, socialization activities and technical guidance on implementing Discovery Learning are urgently needed so that teachers can implement the model appropriately and in context. This socialization is important because Discovery Learning is a learning approach that positions students as active subjects with the following main characteristics: (a) students are involved in decision-making related to the learning framework; (b) students are faced with contextual problems or challenges; (c) students design processes to find solutions to the problems they face; (d) students are collaboratively responsible for accessing, managing, and utilizing information; (e) students periodically reflect on the learning process and outcomes; and (f) the final learning product is evaluated qualitatively ([Bartolo et al., 2024](#)). With a comprehensive understanding of these characteristics, teachers are expected to be able to optimize the role of facilitator in student-centered Physical Education learning ([Bartolo et al., 2024](#)).

The purpose of this community service activity is to increase the understanding of Physical Education, Sports, and Health teachers in Indralaya, Ogan Ilir, regarding the discovery learning model. Through this activity, teachers are expected to apply this learning model to improve student learning outcomes and achievements while supporting the implementation of the Merdeka Curriculum, which emphasizes student-centered learning. This socialization is also expected to help teachers and students develop collaborative,

interdisciplinary, repeated, and authentic learning to encourage active student involvement in the learning process. In addition, the results of this community service activity are expected to be disseminated through various print and online media and published in nationally accredited community service journals as a tangible contribution to the development of PJOK teacher professionalism.

METHODS

This community service activity was carried out with a participatory approach through outreach, workshops, and practical training accompanied by mentoring. This program aims to improve the competence of Physical Education, Sports, and Health (PJOK) teachers in implementing the discovery learning model that aligns with the principles of student-centered learning in the independent curriculum. The activity was carried out on October 20–21, 2025, at SMP Negeri 1 Indralaya, Ogan Ilir Regency, involving 40 PJOK teachers who are members of the Indralaya District PJOK Subject Teachers' Conference (MGMP). The implementation method included interactive lectures, discussions, questions and answers, workshops on developing PJOK learning tools based on discovery learning, and practical implementation of the learning model, followed by mentoring sessions. The community service team, consisting of lecturers and students, acted as resource persons, facilitators, and activity companions. Data collection was conducted using pre-test and post-test questionnaire instruments to measure the increase in teachers' understanding and readiness in implementing the Discovery Learning model, as well as teacher reflection questionnaires to obtain an overview of perceptions, experiences, and obstacles during the implementation of the activity. A questionnaire was used to measure teachers' understanding and readiness to implement the Discovery Learning model, and a teacher reflection questionnaire was used to obtain insights into their perceptions, experiences, and challenges during implementation. The materials covered included identifying the discovery learning model, introducing discovery learning, how to use it, implementing it, and practicing its use. Application in Schools: Pre-test and post-test data were analyzed descriptively and quantitatively by comparing the average scores before and after the activity, while teacher reflection data were analyzed descriptively and qualitatively to strengthen the interpretation of the quantitative results. The results of the activity are expected to encourage more collaborative, interdisciplinary, and authentic PJOK learning, and the dissemination of outputs is carried out through publication in nationally accredited community service journals as a form of real contribution of higher education to improving the quality of PJOK learning.

RESULTS AND DISCUSSION

This community service was implemented through observation, followed by socialization, mentoring, and implementation at school. This activity was carried out from October 1, 2025, to October 28, 2025, for junior high school physical education teachers in Ogan Ilir Regency. The initial discussion with the head and secretary of the Ogan Ilir Regency Junior High School Physical Education MGMP related to problems, solutions, and technical implementation of mentoring and technical guidance for the community service.

The planned stages or steps to address partner issues are:

1. Identifying and coordinating with partners. Activities include observation and coordination with partners and the Ogan Ilir Regency Education Office.
2. Conducting outreach programs and mentoring for all physical education teachers at partner service locations.
3. Providing technical assistance and guidance on the discovery learning model.
4. Conducting classroom implementation simulations by teachers with direct guidance.

5. Monitoring and evaluating the use of learning media.

The results of community service activities show that, based on the pre-test conducted on PJOK teachers in Indralaya, Ogan Ilir, 63.6% of participants did not understand the proper application of the Discovery Learning model in the learning process. Meanwhile, only 36.4% of teachers had basic knowledge and had begun to try to implement this model in the classroom. These findings indicate that the community service activities carried out were in line with the needs of the partners, considering that the Discovery Learning model is in line with an active and student-centered learning approach. The pre-test results data are presented in a bar chart to illustrate the initial level of understanding of teachers before the implementation of the socialization and guidance sessions. Socialization and pre-test guidance on the discovery learning model are shown in Figure 1.

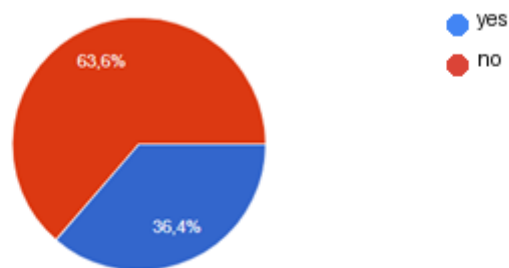


Figure 1 Pre-test socialization and guidance on the discovery learning model

Based on the pre-test results, which indicated that teachers had limited understanding and readiness to implement the Discovery Learning model, community service activities continued through structured outreach and technical assistance. The intervention focused on conceptual understanding of the advantages of the Discovery Learning model, the stages of learning implementation, and strategies for selecting methods tailored to the availability of infrastructure facilities and infrastructure conditions in each school. The post-test results showed an increase in teachers' understanding, readiness, and confidence in designing and implementing Discovery Learning-based physical education (PJOK) learning. This improvement was also reinforced by teacher reflections, which showed that most participants experienced positive changes in their perspectives on student-focused learning, increased ability to plan more exploratory and contextual learning activities, and increased motivation to implement the model sustainably. Furthermore, teacher reflections revealed that the mentoring activities helped overcome doubts in adapting discovery learning steps to limited school facilities so that the learning model could still be implemented effectively. These outreach and technical assistance activities aimed to ensure that PJOK teachers in Indralaya Regency, Ogan Ilir, could implement the Discovery Learning model effectively in their teaching practices. Documentation of the implementation of activities is presented in Figure 2, which describes the process of delivering material and providing technical guidance by the community service team to PJOK teachers in Indralaya, Ogan Ilir.



Figure 2 (a) Opening of PKM activities at SMPN 1 Guru PJOK in Indralaya, Ogan Ilir, (b) Provision of materials, socialization, and assistance to PJOK Teachers, and (c) Guided mentoring for physical education teachers

The community service team delivers material to participants on the Discovery Learning model, which can be understood and applied in physical education and health classes in Palembang. The training material was systematically organized and provided as teaching materials that participants could access again after the activity. These teaching materials were provided to make it easier for teachers to implement and disseminate the training material in their respective schools. After the training and mentoring activities were completed, a post-test was conducted to measure the increase in participants' understanding. The results are presented as a diagram in Figure 3.

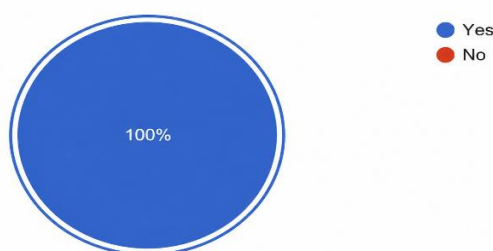


Figure 3 Post-test results of socialization and assistance of the discovery learning model physical education teachers in Indralaya, Ogan Ilir

The post-test results following the socialization and technical guidance conducted by the community service team showed a major innovation: achieving a comprehensive understanding (100%) of the Discovery Learning model among Physical Education teachers in Indralaya, Ogan Ilir. This novel finding lies not only in the increase in knowledge scores but also in the formation of uniform conceptual understanding and implementation readiness of teachers in applying discovery learning contextually according to the characteristics of the PJOK subject and the limitations of school infrastructure. Unlike community service activities in general, which focus on knowledge transfer, this program presents an integrated mentoring approach that combines socialization, direct practice, and reflective mentoring, thereby shifting the teacher paradigm from teacher-centered to student-centered learning. Thus, the post-test results confirm the new contribution of community service in building the collective readiness of PJOK teachers to implement innovative learning models adaptively and sustainably. (Martiani, 2021) explains that Discovery Learning is an innovative learning model that can help students achieve learning objectives optimally. By applying appropriate learning

strategies and methods, students can develop into independent, proactive, responsible, and highly motivated learners. In line with this, it emphasizes that the successful implementation of the Merdeka Curriculum is highly dependent on improving teachers' competence in understanding differentiated learning and performance-oriented teaching through discovery learning.

[Iskandar & Rustanto \(2024\)](#) reveal that discovery learning is a model for developing active learning methods in which students discover and investigate for themselves, resulting in learning outcomes that are memorable and long-lasting, not easily forgotten. Through discovery learning, children can also learn to think analytically and try to solve problems they encounter on their own. Discovery learning not only instills conceptual understanding but also trains students' independence and reasoning skills in the real context of play ([Nildi & Hadinata, 2025](#)). [Rozikin et al. \(2025\)](#) explained that discovery learning is a model that aims to improve critical thinking skills, which is certainly to make students more aware of their own findings and thoughts when faced with a problem. Therefore, students can learn in an interesting, imaginative, and entertaining way. [Sarkol et al. \(2025\)](#) says that the discovery learning method trains students to learn more on their own. In this teaching and learning system, teachers do not present the lesson material in a final form but allow students to search and discover for themselves using problem-solving techniques.

The discovery learning model, which prioritizes direct experience and exploration ([Sinaga et al., 2025](#)). The Discovery Learning model is a learning approach in which the integration of technology in instruction functions to develop students' competencies, creativity, self-control, consistency, and dedication ([Asih et al., 2025](#)). [Mashiruddin et al. \(2025\)](#) stated that learning outcomes achieved through the Discovery Learning model provide a new approach to enhancing students' creativity and motivation to learn. As [Jufri et al. \(2025\)](#) emphasized, discovery learning requires students to actively seek and construct their own knowledge through activities such as gathering information, categorizing, analyzing, and drawing conclusions. Discovery learning not only facilitates a more meaningful and memorable learning process for students but also enhances their active participation in the learning ([Tazudin et al., 2024](#)).

CONCLUSION

This community service activity involved providing information and technical guidance to Physical Education (PJOK) teachers in Indralaya, Ogan Ilir. Pre-test results showed that 63.6% of teachers were unfamiliar with the Discovery Learning model, while 36.4% had an initial understanding. After the socialization and mentoring, post-test results showed that 100% of PJOK teachers understood the characteristics and principles of implementing the Discovery Learning model and expressed their readiness to implement it in their respective schools' PJOK teaching and materials. Concrete follow-up to this activity was realized through the teachers' commitment to developing Discovery Learning-based PJOK learning tools, piloting the model in the current semester, and reflecting on the implementation of the learning as material for ongoing evaluation. In addition, PJOK teachers in Indralaya, Ogan Ilir, increasingly understood the advantages and limitations of implementing the learning model according to the conditions of school infrastructure, so it is expected to increase the effectiveness and success of PJOK learning. As a continuation of the program, community service activities are planned to be implemented in the following year by integrating other innovative learning models in PJOK learning to optimize the learning outcomes of students in Indralaya.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

Conceptualization and design of PKM FAN and WIB: methodology, H; formal analysis, writing—preparation of the original draft, SS and AH. All authors discussed the results and contributed to the final manuscript.

AI DISCLOSURE STATEMENT

The authors declare that they did not use any AI tools or assistance during the preparation of this work. The authors state that this research was designed, conducted, written, and edited without the use of artificial intelligence (AI) technology, and the authors take full responsibility for the content of this article.

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