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Improving the competence of teacher candidates in Islamic religious education through project-based learning with outcome-based curriculum

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ABSTRACT

This study explores the implementation of project-based learning as a strategy to facilitate the development of competencies among prospective Islamic Religious Education teachers candidates within the framework of an outcome-based curriculum. This qualitative research employed a descriptive method and was conducted at the Islamic Education Study Program, Faculty of Tarbiyah and Teacher Training, Universitas Islam Bandung. Data collection techniques included observation, interviews, document analysis, and assessment of student project outputs. Thematic analysis was used to identify key patterns and themes through data reduction, categorization, and interpretation. The findings indicate that studying and internalizing learning model theories, producing teaching simulation videos, conducting teaching practice, and creating mind maps of learning activities played a significant role in shaping students' pedagogical and analytical skills. Overall, the integration of these activities contributed to the achievement of outcome-based curriculum goals. It is recommended that future applications of this model consider cross-disciplinary student collaboration and the integration of technology to enhance innovation in learning.

Kata Kunci: Kurikulum berbasis luaran, Model pembelajaran, Pembelajaran berbasis proyek, Pendidikan Agama Islam, Proses Pembelajaran

ABSTRAK

Penelitian ini mengkaji implementasi *project-based learning* sebagai strategi untuk memfasilitasi pengembangan kompetensi calon guru Pendidikan Agama Islam (PAI) dalam kerangka kurikulum berbasis capaian (*outcome-based curriculum*). Penelitian ini menggunakan pendekatan kualitatif dengan jenis penelitian deskriptif, bertempat di Program Studi PAI, Fakultas Tarbiyah dan Keguruan, Universitas Islam Bandung. Teknik pengumpulan data meliputi metode observasi, wawancara, studi dokumen, dan penilaian hasil proyek mahasiswa. Data dianalisis menggunakan teknik analisis tematik melalui proses reduksi data, kategorisasi, dan interpretasi untuk menemukan pola dan tema utama. Hasil penelitian menunjukkan bahwa aktivitas pendalaman dan internalisasi teori model pembelajaran, pembuatan video simulasi mengajar, praktik mengajar, dan penyusunan *mind map* memiliki kontribusi penting dalam membentuk keterampilan pedagogis dan analitis mahasiswa. Secara keseluruhan, integrasi keempat aktivitas tersebut mendukung tercapainya tujuan kurikulum berbasis capaian. Ke depan, model ini disarankan untuk dikembangkan dengan melibatkan kolaborasi lintas program studi serta pemanfaatan teknologi guna mendorong pembelajaran yang lebih inovatif.

1. Introduction

In the developing era of globalization and digitalization, the world of education is required to produce graduates who not only have academic competence but also 21st century skills, such as critical thinking, creativity, collaboration, and communication. This challenge becomes even more complex in the context of Islamic religious education, which not only aims to produce individuals who are intellectually intelligent, but also have high moral and spiritual integrity. As the spearhead in the process of religious education, prospective Islamic Religious Education (IRE) teachers play a strategic role in producing a generation that is noble and able to compete at the global level[1]. Therefore, strengthening the competence of prospective IRE teachers is a very important agenda in an effort to improve the quality of religious education in Indonesia [2].

Previous studies have indicated that prospective IRE teachers still face challenges in mastering pedagogical, professional, social, and personality competencies in an integrated manner [3], [4], [5]. The gaps that arise are often caused by learning approaches that still focus on theory alone, without providing sufficient space for meaningful and reflective practical experiences. Many prospective teachers do not have adequate skills in designing innovative learning, evaluating learning independently, or integrating spiritual and ethical values in their teaching practice.

Outcome-based education (OBE) has become one of the approaches adopted in the national education system to answer these challenges. This approach emphasizes learning outcomes that are specific, measurable, and relevant to the needs of the world of work and the demands of society [6], [7], [8]. In the context of IRE teacher candidates' education, the implementation of outcome-based curriculum demands the development of learning models that are able to integrate theory and practice effectively. One of the relevant approaches to achieve this goal is project-based learning.

Project-based learning has been shown to be an effective method in developing 21 century skills, including critical thinking, problem solving and teamwork [9], [10]. This approach provides opportunities for student teachers to learn actively through the completion of real projects relevant to the world of religious education. In addition, project-based learning also allows students to internalize Islamic values through contextual and meaningful learning experiences. However, the application of this method in IRE prospective teacher education programs still faces various challenges, such as limited resources, lack of training for lecturers, and resistance to changes in the learning paradigm. Project-based learning has been proven as an effective method in developing 21st century skills, including critical thinking, problem solving, and teamwork. This approach provides opportunities for student teachers to learn actively through the completion of real projects relevant to the world of religious education. In addition, project-based learning also allows students to internalize Islamic values through contextual and meaningful learning experiences. However, the application of this method in IRE prospective teacher education programs still faces various challenges, such as limited resources, lack of training for lecturers, and resistance to changes in the learning paradigm.

This article aims to explore the strategy of strengthening IRE teacher candidates' competencies through the implementation of project-based learning within the framework of an outcome-based curriculum. This research not only aims to understand the effectiveness of this method in improving the professional, pedagogical, social, and personality competencies of prospective teachers, but also to identify the obstacles and opportunities that exist in its implementation. Thus, this article is expected to make a real contribution to the development of a more innovative and competitive IRE teacher education program.

As part of the implementation of the outcome-based curriculum, strengthening the competence of IRE teacher candidates through project-based learning is also in line with the vision of national education to produce intellectually superior and noble graduates. This is important considering the moral and social challenges faced by the younger generation are increasingly complex in the midst of globalization. Therefore, prospective IRE teachers are not only required to master the teaching materials, but also to be able to become role models in practicing Islamic values in daily life.

Through a project-based learning approach, prospective IRE teachers can be trained to design, implement, and evaluate educational projects that are relevant to the needs of the community. This process not only enriches their insight into the theory and practice of religious education, but also strengthens their skills in dealing with various complex situations in the field [11], [12], [13]. In addition, this approach also provides space for students to develop creativity and innovation in addressing various educational challenges, such as students' lack of interest in learning, gaps in understanding between theory and practice, and social issues that affect the world of education [14].

Strengthening the competence of prospective IRE teachers through project-based learning not only contributes to the improvement of religious education, but also supports the broader development of national education [15], [16], [17]. Competent, creative, and ethical teachers are essential in shaping future generations who are not only intellectually capable but also morally and spiritually grounded. This aligns with the goals of national education, which prioritize the holistic development of individuals. Therefore, a learning approach that integrates theory and practice is crucial to creating meaningful and impactful learning experiences for teacher candidates.

The novelty of this study lies in the specific design and evaluation of four interconnected project-based learning activities: the exploration of learning model theories, the production of teaching simulation videos, classroom teaching practice, and the development of mind maps outlining learning steps. Unlike previous studies that addressed competency development in more general terms, this research offers a more detailed and structured model aligned with the principles of an outcome-based curriculum. The results contribute not only to academic discourse but also provide an effective, efficient, and applicable learning model for IRE teacher education programs. As such, this article serves as a practical reference for educators, policymakers, and higher education institutions in designing innovative and responsive curricula and learning strategies to meet the evolving demands of the education landscape.

2. Method

This study used a qualitative approach to explore how project-based learning helps strengthen the competencies of prospective IRE teachers in an outcome-based curriculum. It aimed to understand students' experiences and learning processes, focusing on their stories and project work rather than statistical data.

Figure 1. Research Flow

Figure 1 show the research process begins with problem identification, research focus, sampling, and developing instruments, data collection, interpretation and conclusion, and data analysis. The research took place at the Islamic Religious Education Study Program, Faculty of Tarbiyah and Teacher Training, Universitas Islam Bandung, which uses an outcome-based

curriculum and applies project-based learning in several courses. The Learning Models course, which prepares students for designing modern learning models, was the focus. Fifth-semester students in this course were chosen because of their relevant knowledge and experience with project-based tasks

Data were collected through observations during classes and project presentations, interviews about students' experiences and challenges, and document analysis, including project outputs and course materials. The collected data were analysed using thematic analysis, which involved data reduction, coding, categorization, and interpretation to identify key themes and patterns related to competency development. To enhance data credibility, triangulation was carried out by cross-verifying findings from different data sources and techniques. This research is expected to provide a comprehensive understanding of the effectiveness of project-based learning in strengthening the competence of prospective IRE teachers, as well as offering strategic recommendations to improve the quality of education in the IRE Study Program of UNISBA and similar institutions [18].

3. Results and Discussion

This study aimed to explore how strengthening the competencies of prospective Islamic Religious Education (IRE) teachers can be achieved through project-based learning. The focus was on four main activities: 1) study and inculcation of learning model theories; 2) making teaching simulation videos; 3) teaching practice; and 4) preparing a mind map of learning model steps.

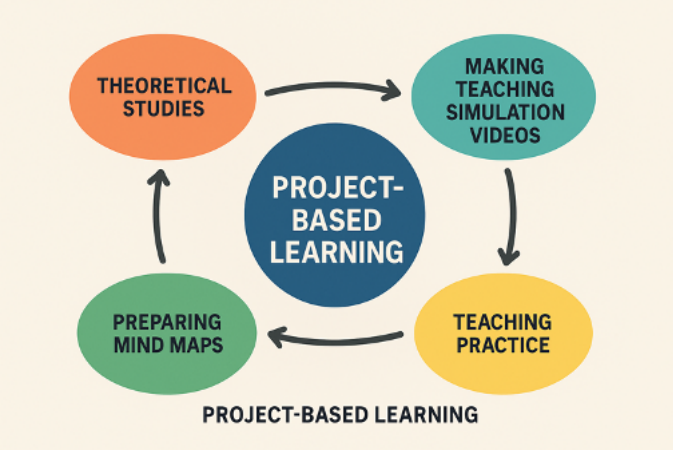

Figure 2: PBL model: theory, simulation video, teaching practice, and mind map

These activities as described at figure 2 are designed to provide integration between theoretical understanding and practical skills in forming competent and professional prospective educators. A detailed explanation of the results of this research is as follows.

3. 1. Review and cultivation of learning model theories

As the foundation of project-based learning, theoretical study is a crucial first step in building students' competence. In this stage, students learn various theories of learning models, such as project-based learning, cooperative learning, inquiry-based learning, and other approaches. Lecturers provide introductory material on the basic concepts, advantages, disadvantages, and application of each learning model. Students are also actively involved in reading scientific literature, group discussions, and presentation of study results. These activities not only improve students' theoretical understanding, but also train their critical and analytical thinking skills. For

example, students are faced with a case study that requires them to choose the right learning model based on a particular situation.

Theoretical study is an important element in project-based learning because it provides a strong knowledge base before students dive into practice. According to Ausubel in meaningful learning theory, learning will be more effective if the new material has a connection with the existing knowledge [19], [20]. By understanding the theory first, students can relate new concepts to previous experience or understanding. In addition, group discussions and presentations provide additional benefits. According to Vygotsky's social constructivism theory, learning through social interaction can enrich individual understanding [21], [22]. Students learn not only from materials delivered by lecturers but also from discussions with peers. This trains analytical abilities, collaborative skills and communication, which are important competencies for a teacher. The results showed that this stage provides a strong conceptual foundation. An in-depth understanding of learning model theories makes students more confident when proceeding to the practical application stage. In this context, theoretical studies help students connect the concepts learned with their previous experiences, so that the knowledge gained becomes more meaningful.

3.2. Teaching simulation video production

After understanding the theory, students are directed to make a teaching simulation video. This activity aims to train students in delivering material in front of the class systematically and effectively. In this simulation, students choose one learning model, design a learning scenario, and record their teaching process. Making a teaching simulation video provides space for students to apply theory in a structured situation. This activity is in line with constructivism theory, which emphasizes that the most effective learning occurs through direct experience and reflection. In addition, the simulation video becomes a valuable tool for self-reflection. According to Schon In the concept of reflective practice, the process of re-watching videos helps students see their strengths and weaknesses objectively. For example, students can identify whether their learning strategies have been effective or whether they have succeeded in creating good interactions with students.

In terms of competency development, this activity trains their public speaking, material mastery, and classroom management skills. The feedback students receive also encourages them to keep improving, in line with the concept of feedback loop in project-based learning. The results showed that video production provided great opportunities for students to develop their communication skills, classroom management, and mastery of the material. The video serves as a reflection tool, where students can reassess their strengths and weaknesses. For example, some students realized that their voice intonation was not varied enough or that interaction with students in the simulation could be improved. Vygotsky's theory of constructivism is highly relevant to this activity [21], [22]. Teaching simulations allow students to learn through direct experience and reflection, and construct new knowledge based on social interaction and practice. In addition, the simulation video provides a platform for students to receive feedback from lecturers and peers, which enriches their learning process.

3.3. Teaching Practice

Teaching practice is the core of project-based learning. In this activity, students teach in a simulated classroom or in a real learning environment. They are asked to apply the learning theories and strategies they have learned, including developing lesson plans, selecting learning media, and managing classroom dynamics. Teaching practice is the most important stage in project-based learning as it provides hands-on experience that cannot be replaced by theory alone. In Kolb's experiential learning theory, direct experience is the core of learning as it allows individuals to understand concepts through practice. Students not only learn how to deliver the material but also how to deal with complex situations, such as inactive students or classroom disruptions. This trains adaptability and problem-solving skills, which are essential for a teacher. In addition, teaching practice provides insight into how different learning models can be adapted

in different situations. For example, cooperative learning may be more effective in a class with heterogeneous students, while project-based learning may yield good results in a smaller, homogeneous class.

The results showed that teaching practice had a significant impact on strengthening students' pedagogical skills. This experience allows them to learn to face real challenges, such as dealing with less active students or managing time efficiently. Teaching practice also helps students understand the importance of flexibility and creativity in delivering material. Kolb's experiential learning theory supports this activity, where direct experience is at the core of the learning process [23], [24], [25]. In teaching practice, students not only apply theory but also reflect on their experiences to improve their teaching quality. In addition, Lave and Wenger's situated learning theory emphasizes the importance of learning within a specific social and cultural context [26], [27]. Teaching practice gives students insight into how the learning context affects the strategies and approaches they use.

3.4. Development of Mind Map on Learning Model Steps

Making a mind map is an activity that helps students organize the steps in implementing a particular learning model. Students are asked to visualize the learning process from planning to evaluation. This mind map is an effective tool to develop a structured learning strategy. He preparation of mind maps is an effective tool to strengthen students' conceptual understanding. According to Paivio's dual coding theory, information that is presented visually is easier to understand and remember than information that is only presented verbally. Mind maps help students see the relationship between various steps in the learning process, so they can design a more structured strategyIt also encourages students to think critically and creatively. In the process of creating a mind map, students have to evaluate relevant information, organize it and identify relationships between elements [28], [29]. These skills are essential in designing effective learning that is relevant to students' needs.

The results showed that making a mind map helps students understand the relationship between steps in the chosen learning model. By visually mapping the learning process, students can identify areas that need more attention. For example, they can see that the evaluation stage is often less planned in detail than the preparation stage. Cognitive learning theory is again relevant in this activity. Mind maps help students organize information in a more organized cognitive structure, making it easier to understand and remember. In addition, the use of mind maps encourages students to think critically and creatively in designing lessons, which are essential skills for an educator [30].

These four activities reflect the main principle of project-based learning, which is the integration between theory and practice. Each activity is designed to actively involve students in the learning process, from understanding the theory to applying it in real situations [5], [10], [31]. In the context of Islamic Religious Education, project-based learning is very relevant because it allows prospective teachers to develop holistic competencies. These competencies include pedagogical ability, mastery of material, managerial skills, and sensitivity to student needs. These activities also support the development of 21st century skills, such as critical thinking, collaboration and communication. Project-based learning provides a meaningful and applicable learning experience[32]. Students not only learn to memorize theories but also to understand how these theories can be implemented in practice[33]. This is in line with the objectives of the outcome-based curriculum, which emphasizes learning outcomes that are relevant to the needs of the world of work and society [10], [34], [35].

Based on the OBE context, learning is structured with a focus on achieving a clear end goal, namely the competencies that must be possessed by students after the learning process. Based on the curriculum document and the Graduate Learning Outcomes (LLOs) of the Islamic Education Study Program, the targeted competencies include: 1) in-depth understanding of learning models relevant to Islamic religious education; 2) ability to apply pedagogical knowledge creatively and contextually in various learning situations; 3) ability to communicate and cooperate; and 4) demonstrate professional attitude and integrity as prospective teachers.

In this study, the project-based learning process showed a close relationship with the achievement of these competencies. For example, the learning model theory exploration phase helped students to develop a deeper understanding of various learning approaches, which was reflected in their ability to select and adapt models to suit their classroom needs. The activity of making teaching simulation videos provides space for students to reflect on their pedagogical performance and improve their skills in managing effective learning, which is one of the important aspects of pedagogical competence learning outcome 2. In addition, classroom teaching practice allows students to apply the theories they have learned in a real context, giving them hands-on experience that improves their ability to deal with classroom dynamics.

The creation of mind maps as part of PBL activities helps students to organize information systematically and develop analytical thinking skills and metacognitive awareness - skills that are essential in 21st century learning and support the achievement of learning outcome 1 and 3. Reflections collected from interviews with students show that they feel more prepared and confident in implementing the learning model they have learned, and are able to connect theory with practice more effectively. As a result, PBL proved to be a very relevant learning strategy in supporting the achievement of OBE objectives, especially in developing the competencies needed by prospective teachers. PBL not only enables students to develop practical and reflective skills, but also builds sustainable learning habits. This process also creates a learning atmosphere that is more contextual and relevant to the needs of today's educational world, in accordance with the principles of OBE which emphasizes the importance of experiential learning [36], [37], [38].

Thus, this study showed the importance of implementing project-based learning in developing PAI teacher candidates' competencies in accordance with the OBE approach. The application of PBL in teacher education programs, as shown in this study, not only strengthened students' competency achievement but also enriched their learning experience, which was very important in preparing them for the challenges in the world of education.

5. Conclusion

The study revealed that the combination of theoretical study, making teaching simulation videos, teaching practice, and preparing mind maps made a significant contribution in strengthening the competence of prospective IRE teachers. These four activities provided a holistic learning experience, connecting conceptual understanding with practical skills. This learning process opened up space for prospective teachers to not only prepare themselves to face educational challenges, but also encouraged them to develop the ability to learn continuously and form an identity as a professional educator.

In the context of an OBE, these activities complement each other to support the achievement of competencies that are relevant to the demands of the world of education. Theoretical studies provide a knowledge base on which to base their thinking, while the making of teaching simulation videos and teaching practice provide hands-on experience that allows students to apply theory in real situations. The creation of mind maps is one way to help students reflect and organize the learning process systematically, improving their understanding of the relationship between concepts. The connection between these activities and the achievement of IRE teacher candidates' competencies can be seen through how students not only understand the theory, but also connect it with their practical experiences. From an OBE perspective, these activities support the achievement of learning objectives that focus on the competencies required for the ever-evolving world of education. Therefore, this study provides an overview of how project-based learning can be a means to strengthen IRE teacher candidates' competencies, while providing a deeper understanding of the integrative learning process.

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