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Enhancing Students Creativity through Design-Based Learning (DBL) in Islamic Religious Education (IRE) Study Program

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ABSTRACT

This article aims to explore the use of design-based learning (DBL) as well as measure its impact on the creativity of Islamic Religious Education (IRE) study program students. Creativity is one of the 21st century competencies that is believed to act as a catalyst for the development of other competencies such as character, citizenship, critical thinking, collaboration, and communication. This article is written based on research at IAIN Kediri, especially in the IRE study program. A mixed method with a convergent design was chosen to guide the operationalization of this research. Qualitative data were collected through interviews, observations, and documentation on the implementation of DBL in IRE Learning Innovation lectures. Meanwhile, quantitative-descriptive data based on product assessment was maximized to categorize student creativity after the implementation of DBL. Student creativity is measured by divergent thinking, originality of ideas, perseverance, and intellectual risk-taking. This article concludes that DBL is implemented with several steps such as providing assignments, setting criteria, completing challenges, and evaluating innovative products. The application of DBL has implications for student creativity, where 53,03% of students are in the very creative category, 30,3% of students are in the creative category. There are still 16,67% of students who are in the average category, but that is more due to the limited ability of students to access digital resources.

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1. INTRODUCTION

Creativity is a fundamental aspect of students' intellectual development that allows them to create innovative solutions and think beyond conventional boundaries. This creative process is not only relevant in the field of art, but also important for solving complex problems in the professional world. In the midst of global competition, the ability to generate new ideas is the main capital that supports success in various sectors (Runco & Jaeger, 2012). Therefore, enhancing creativity in the academic

environment must be a priority, in line with the need to develop soft skills that are highly sought after by modern industry and the business world.

In the context of Islamic Religious Education (IRE), the role of education is not only limited to teaching spiritual and moral values, but also as a forum for developing students' intellectual and creative potential. Conventional learning methods that often emphasize memorization and repetition are less effective in fostering critical and innovative thinking skills. This creates an urgent need to integrate modern learning approaches that are responsive to the times, so that Islamic values can be conveyed in a more dynamic and applicable manner. Pedagogical innovation is expected to bridge the gap between tradition and modernity in Islamic education (Suyadi et al., 2022).

Design-Based Learning (DBL) is a pedagogical innovation that integrates the principles of design thinking into the learning process. DBL encourages students to actively engage through the process of designing, testing and developing creative ideas in the context of real projects. This method emphasizes hands-on engagement and practical application of knowledge, resulting in more contextual and meaningful learning. By combining elements of creativity and collaboration, DBL is a strategic alternative to overcome the limitations of traditional approaches in developing student competencies (Cash et al., 2012).

One of the main mechanisms in DBL is the application of project-based learning that encourages students to face real problems through a series of design stages. This approach invites students to integrate theory with practice through exploration, planning and evaluation of solutions. Thus, students are required to think creatively and systematically in formulating innovative solutions. This interactive process allows them to develop holistic problem-solving skills, increase self-confidence, and strengthen collaborative skills that are essential in the modern workplace (Kolodner et al., 2003).

Various empirical studies have shown that the implementation of DBL can significantly improve student learning outcomes and creativity. This method creates a dynamic and collaborative learning environment, where students can experiment with new ideas and integrate various sources of knowledge in solving problems. Active involvement in each design stage allows students to gain hands-on experience that optimizes concept understanding and innovative ability. This empirical evidence supports that DBL is not only effective in improving material mastery, but also as a catalyst in developing creativity that is applicable in the real world (Hmelo-Silver, 2004).

The DBL approach has a strong theoretical basis, especially from the perspective of constructivism and instructional design principles. Merrill argues that effective learning should integrate real-life experiences, activation of existing knowledge, and application of knowledge through simulations and real projects. This theoretical framework emphasizes that the role of students as active agents in the learning process is the key to success. By applying these principles, DBL is able to create a systematic, structured, and contextualized learning process, while supporting the development of creativity and in-depth problem solving skills (Merrill, 2002).

The application of DBL in IRE study programs offers great potential to integrate Islamic values with modern learning approaches that emphasize creativity. This method allows students to understand religious teachings deeply through an interactive and contextual process, while developing innovative skills that are relevant to the needs of the times. With a design-based approach, students not only learn about Islamic theory, but are also trained to apply these values in solving real-life problems. This integration is expected to produce IRE graduates who have a balance between spiritual competence and innovative abilities in the professional world (Affandy et al., 2024).

Although there have been many studies that examine the effectiveness of DBL in various disciplines, the application of this method in the context of IRE is still relatively uncommon (Bozkurt Altan & Tan, 2021; Gallagher & and Savage, 2023; Prasetia et al., 2021; Zhang et al., 2022). This gap in the literature suggests a great opportunity to explore how DBL can be used as an innovative strategy

to enhance IRE students' creativity. Further research is expected to empirically reveal the impact of DBL implementation on students' innovative ability and religious understanding. The findings will make an important contribution to the development of learning models that are more responsive to the needs of the times and relevant to the Islamic context.

Transformation of learning approach through DBL is a strategic solution to enhance student creativity (Chang et al., 2022), especially in the context of IRE. This pedagogical innovation not only overcomes the limitations of traditional approaches, but also opens opportunities for the integration of Islamic values with the development of soft skills that are essential in the modern era (Rohman et al., 2023; Shofiyyah et al., 2023). Therefore, this study aims to evaluate the effectiveness of DBL in enhancing IRE students' creativity and provide recommendations for curriculum development that is more adaptive and applicable.

2. METHODS

This article is based on research conducted at IAIN Kediri during the odd semester of the 2024/2025 academic year. The author used Creswell's mixed method with a convergent design. Qualitative data and quantitative data were collected simultaneously, analyzed separately, and then the results were combined integrally (Creswell, 2014). Qualitative data were collected through interviews, observations, and documentation on the implementation of DBL in the IRE Learning Innovation course. While quantitative-descriptive data based on product assessment was maximized to categorize student creativity after the implementation of DBL.

The respondents in this study were seventh semester PAI study program students in classes C and D who were attending the PAI Learning Innovation lecture, which was taught by the author. In detail, the students involved can be mapped as in table 1 below:

Table 1. Respondents of the Study

No	Class	Person
1.	IRE VII-C	34
2.	IRE VII-D	32
Total		**66**

Student creativity is measured by divergent thinking, originality of ideas, perseverance, and intellectual risk-taking (Oo et al., 2024). The assessment of student creativity is based on the indicators in Table 2 below:

Table 2. Student Creativity Assessment Indicators

No.	Aspect	Assessment Criteria	Score
1.	Divergent Thinking	a. Skilled in combining audio-visual elements in innovative products	15
		b. Flexible in choosing Digital Technology based on advantages and disadvantages	10
2.	Originality of Ideas	a. Display novelty of innovation product design / type of Digital Technology used	15
		b. Innovative product design optimizes the advantages of the Digital Technology used	10

3.	Perseverance	a.	Skillfully demonstrate the steps of making an innovation product	15
		b.	Collect innovation products on time or early	10
4.	Intellectual Risk-Taking	a.	Able to take responsibility for the design of innovation products when presenting	15
		b.	Able to show the weaknesses of the innovative product design honestly and openly	10
			Total	**100**

To analyze student creativity, the author classifies the value of learning media innovation products produced by students based on the following table 3:

Table 3. Classification of Student Creativity

No.	Score Range	Grade	Category
1.	91 – 100	A	Very Creative
2.	86 – 90	A-	Creative
3.	80 – 85	B+	Average
4.	76 – 79	B	Creative Enough
5.	< 75	B-	Less Creative

3. FINDINGS AND DISCUSSION

3.1. DBL Implementation in IRE Learning Innovation Course

Based on respondent characteristics and several other considerations, the author made some adjustments. Thus, DBL in this study was conducted through the stages of providing assignments, setting criteria, completing challenges, and evaluating innovative products

a. Providing Assignments

After explaining the lecture contract and introductory material in accordance with the Semester Learning Plan, the lecturer gave individual assignments in the form of digital technology-based innovative IRE learning media design projects. In order to avoid content similarity, the class was divided into 4 large groups according to the number of IRE subjects taught in schools/madrasas for grades 10, 11, and 12. The subjects include *Aqidah Akhlaq*, *Al-Qur'an Hadis*, *Fiqh*, and Islamic Cultural History (*SKI*).

Students are allowed to choose several alternative learning media such as text teaching materials, animated video teaching materials, audio-visual teaching materials, diagnostic evaluation, formative evaluation, or summative evaluation. Students are given the freedom to utilize all possible digital technologies, including the use of Artificial Intelligence (AI). Based on the author's observations, the class showed two different responses. There were some students who seemed surprised by this assignment. But the majority showed their enthusiasm (Observation, IRE Learning Innovation Lecture on VII-C/VII-D Class, September 13, 2024).

AK, an IRE VII-D student, said that this assignment was a new thing during her time in college. There was a little doubt whether he would be able to do this assignment well or not (Interview, AK, September 13, 2024). The opposite response was shown by NF, an IRE VII-C student. She felt challenged to do this assignment because previously she had only used AI to create content on social media for personal use (Interview, NF, September 13, 2024).

b. Setting Criteria

After giving the assignment, the lecturer sets the assessment criteria oriented to student creativity. These criteria are used to assess the results of IRE learning media innovations that will later be designed by students. As the assessment indicators listed in Table 2, the assessment criteria include aspects of divergent thinking, originality of ideas, persistence, and intellectual risk-taking. From the assessment criteria, the lecturer compiled an appropriate assessment rubric (Document of Assessment Rubric for IRE Learning Innovation Course Class VII-C/VII-D, September 13, 2024).

ZDA, an IRE VII-C student, said that the determination of the assessment criteria explained by the lecturer was very helpful in carefully preparing all aspects needed (Interview, ZDA, September 13, 2024). With this direction, DNR, an IRE VII-D student, also believed that he could optimize his efforts to achieve maximum scores (Interview, DNR, September 13, 2024). This is in line with the author's observation that after knowing the assessment criteria set, students were eager to ask questions to clarify the meaning of each criterion. In addition, many of them immediately confirmed the types of digital technology that could be used (Observation, IRE Learning Innovation Lecture on VII-C/VII-D Class, September 13, 2024).

c. Completing Challenges

At this stage, lecturers allow students to work on learning media design projects at their own pace, according to their creativity and innovation. Lecturers prepare a Google Spreadsheet link to recap the design plan that will be made by students. This plan includes the theme of the learning material, the type of media to be created, the digital technology to be used, and a brief explanation of the learning media design model to be produced (Learning Media Design Project Plan Document for IRE Learning Innovation Course Class VII-C/VII-D, September 20, 2024).

In an interview, MBU expressed high enthusiasm for the task of making IRE learning media design. He felt very motivated because the project could be adapted to the technology she had mastered, thus providing an opportunity to develop creativity and innovation. His enthusiasm reflected her readiness to face the digital challenges of future education. This student is optimistic that she can change learning to be more effective (Interview, MBU, September 27, 2024).

Synergistically, RTR stated that he had experimented with several AI to complete the IRE learning media design task. Through intensive experimentation, he understood the strengths and weaknesses of each AI. The process opened new insights and improved technological skills, while enhancing creativity in designing innovative and effective learning media (Interview, RTR, October 4, 2024).

d. Evaluating Innovative Products

Students present the projects they have designed over several weeks, depending on their individual abilities. Normatively, the lecturer gives a limit to the completion of the assignment until the 7th meeting. However, in practice, there were some students who did not complete their projects on time. From the 8th meeting, the lecturer began to provide opportunities for students to present their design projects. This presentation is part of the evaluation of innovative products that have been made by students. Through this evaluation, the lecturer analyzed students' creativity in designing digital technology-based IRE learning media.

After the entire series of evaluations were carried out, the IRE learning media design scores of the PAI VII-C and PAI VII-D class students were obtained in Table 4 as follows:

Table 4. Recap of IRE VII-C and PAI VII-D Scores

No	Score Range	Person	Percentage
1.	91 – 100	35	53,03%
2.	86 – 90	20	30,3%
3.	80 – 85	11	16,67%
	Total	**66**	**100%**

3.2. Student Creativity Outcomes after DBL Approach Implementation

Lecturers implemented DBL in the IRE Learning Innovation course at IAIN Kediri during the odd semester period of the 2024/2025 academic year. After applying this DBL, there are some important findings related to student creativity. The distribution of PAI learning media design project results made by IRE VII-C and PAI VII-D class students can be mapped in table 5 as follows:

Table 5. Distribution of IRE Learning Media Design Results

No	Type of Learning Media	Person	Percentage	Digital Technology / AI Used
1.	Text Teaching Materials	9	13,64%	Canva, Heyzine, Flippingbook
2.	Animated Video Teaching Materials	13	19,69%	Wordwall, Gamilab, Twinkl
3.	Audio-Visual Teaching Materials	15	22,73%	Gamma AI, Gimkit, Teachy App
4.	Diagnostic Evaluation	7	10,61%	Quizziz, Quizalize , Blooket
5.	Formative Evaluation	17	25,76%	Quizwhizzer, Nearpod, Lumio, Mentimeter
6.	Summative Evaluation	5	7,57%	Kahoot!, Educaplay, Baamboozle
	Total	**66**	**100%**	

Table 5 shows that students' creativity can be seen from the various digital technologies used to design IRE learning media. The majority of them are open to learning the latest technology, including AI that can be optimized to design learning media. Some of the AI-based digital technologies used include Canva, Heyzine, Flippingbook, Wordwall, Gamilab, Quizziz, Gamma AI, Quizwhizzer, Kahoot!, Twinkl, Educaplay, Gimkit, Quizalize, Baamboozle, Teachy App, Blooket, Nearpod, Lumio, Mentimeter, and so on. Furthermore, student creativity after the presentation was carried out, the following scores were obtained:

Table 6. Creativity of IRE VII-C Students

No	Score Range	Person	Category	Percentage
1.	91 – 100	18	Very Creative	52,94%
2.	86 – 90	11	Creative	32,35%
3.	80 – 85	5	Average	14,71%
	Sum	**34**		**100%**

Table 6 shows that 52,94% of IRE VII-C students are categorized as very creative. 32,35% of students are in the creative category. And the remaining 14,71% are in the average category.

Table 7. Creativity of PAI VII-D Students

No	Score Range	Person	Category	Percentage
1.	91 – 100	17	Very Creative	53,125%
2.	86 – 90	9	Creative	28,125%
3.	80 – 85	6	Average	18,75%
	Sum	**32**		**100%**

While table 7 shows that 53,125% of IRE VII-D students are in the very creative category. 28,125% of students are in the creative category. And the remaining 18,75% are in the average category. When analyzed accumulatively, the creativity achievements of IRE VII-C and IRE VII-D students can be mapped as follows:

Table 8. Creativity of IRE VII-C and IRE VII-D Students

No	Score Range	Person	Category	Percentage
1.	91 – 100	35	Very Creative	53,03%
2.	86 – 90	20	Creative	30,3%
3.	80 – 85	11	Average	16,67%
	Sum	**66**		**100%**

Based on table 8, overall it is known that 53,03% of IRE VII-C and IRE VII-D students are in the very creative category. 30,3% of students are in the creative category. And 16,67% were in the average category. The variation in students' creativity achievements is understandable considering the characteristics of their learning styles and their ability to optimize digital technology are also different.

Discussion

4.1. DBL Implementation in IRE Learning Innovation Course

The IRE Learning Innovation course is one of the core courses in IAIN Kediri's IRE Study Program. This course is oriented towards students' skills in designing reforms in learning, especially in the aspects of planning, implementation, and evaluation. Therefore, the lecturer applied DBL based on the argument that DBL is very relevant to the needs and orientation of this course. In this course, the lecturer applied DBL referring to Project-Oriented Design-Based Learning (PODBL) from Chandrasekaran et al. The stages include providing challenges, setting criteria, experimenting, and project presentation (Chandrasekaran et al., 2013).

DBL in this study was conducted through the stages of providing assignments, setting criteria, completing challenges, and evaluating innovative products.

a. Providing Assignments

The lecturer delivered individual tasks in the form of creative IRE learning media design projects based on digital technology after outlining the lecture contract and introduction material in line with the Semester Learning Plan (RPS). The class was split up into four sizable groups based on how many IRE subjects were taught in schools and madrasas for grades 10, 11, and 12 in order to prevent content similarities. Islamic Cultural History (SKI), Fiqh, Al-Qur'an Hadis, and Aqidah Akhlaq are among the topics covered. The assignment based on these grades is in line with the characteristics of DBL (Gómez Puente et al., 2013).

Students are allowed to choose several alternative learning media such as text teaching materials, animated video teaching materials, audio-visual teaching materials, diagnostic evaluation, formative evaluation, or summative evaluation. Students are given the freedom to utilize all possible digital technologies, including the use of Artificial Intelligence (AI) (Pretorius, 2023). AI was shown to

contribute to the creative self-efficacy, critical reflection, and development of the participants' reflections (Khutsishvili, 2024; Saritepeci & Yildiz Durak, 2024).

This challenging assignment can provide meaningful contextual experiences for students in designing innovative IRE learning media according to the needs and characteristics of the subjects in their family. Integrated practical skills according to real-world needs need to be honed through in-depth learning, where in this context DBL is one of the powerful ways to achieve this (Atkinson & Barker, 2023; Clavert & Paloposki, 2015).

b. Setting Criteria

Following the project, the lecturer establishes evaluation standards that are focused on the inventiveness of the students. The outcomes of IRE learning media innovations—which students will subsequently design—are evaluated using these criteria. The assessment criteria include aspects of divergent thinking, originality of ideas, persistence, and intellectual risk-taking (Oo et al., 2024).

The criteria are communicated to students transparently so that they understand how to get the best grade for their learning media design assignment. Setting criteria is important in evaluating the progress of students' creativity in designing learning media. As Liu's research shows, having relevant assessment criteria is appropriate for improving students' learning comprehension and design skills (Liu, 2023).

c. Completing Challenges

Students work independently in completing their projects. They are free to incorporate their own creative and innovative ideas. However, students are still allowed to discuss with each other or ask directly to the lecturer if there are some unclear things. Students' creativity and innovation have the potential to increase when they are given the freedom to work on projects given to them (Jacobs, 2018; Weng et al., 2022).

Students need different skills to make learning media innovations in accordance with the substance of the IRE material studied (Plummer et al., 2022). Consideration of teaching materials and the type of media used requires several important skills such as research skills, communication, product creation, technical skills, and reflection (Heikkilä et al., 2017). Therefore, lecturers as educators need to help students by providing recommendations and considerations on important current issues related to PAI. Sharing experiences is also another valuable option to help students complete assignments.

d. Evaluating Innovative Products

Depending on their unique skills, students present the projects they have produced over a period of several weeks. Typically, the professor sets a deadline of the seventh meeting for finishing the task. In reality, though, some students failed to finish their assignments on time. The lecturer started giving pupils the chance to showcase their design concepts at the eighth meeting. This presentation is a component of the assessment of student-made innovative items. The lecturer examined students' inventiveness in creating digital technology-based IRE learning materials through this assessment.

This step is the last important step in the DBL process. Analysis of the test results provides valuable insights into the effectiveness of the DBL process in addressing real-world challenges and promoting creative thinking among students (Doppelt, 2009; Li et al., 2023). In the context of DBL applied to PAI learning, lecturers can assess students' design work by letting them present their work while defending their ideas.

4.2. Student Creativity Outcomes after DBL Approach Implementation

Creativity variations of the student reflect not only differences in natural aptitude, but also the result of interactions between the academic environment and the teaching methodologies applied (Suryanto et al., 2021). Several studies have shown that environmental factors and innovative teaching approaches contribute greatly to the development of students' creativity (Cayubit, 2022; Kozhevnikov et al., 2022; Wannapiroon & Pimdee, 2022).

Differences in student creativity are also closely related to their learning styles (El-Sabagh, 2021). Students with visual, auditory or kinesthetic learning styles tend to develop creative abilities differently, which then affects the way they process and convey knowledge (Roelle & Nückles, 2019). Adaptation of learning methods to individual learning styles can optimize students' creativity potential (Van Beveren et al., 2018).

Students' ability to optimize digital technology is also a key factor in shaping creativity (Tang et al., 2022). The utilization of technology in the teaching-learning process allows students to explore creative ideas through various digital platforms, ranging from e-learning to collaborative applications (Ulfert et al., 2022). The integration of digital technology in learning can significantly increase student creativity and innovation (Selwyn & Aagaard, 2021).

In the perspective of Islamic education, a holistic approach that integrates Islamic values with modern educational innovations is important to create an environment conducive to the development of creativity (W & Hasanah, 2024). Combining traditional approaches with digital learning methods allows students to not only master knowledge (Batat, 2024), but also develop creativity within a strong ethical and spiritual framework (Albar et al., 2024). Therefore, the integration of Islamic values and modern technology is a powerful strategy to optimize student creativity in the context of contemporary Islamic education.

4. CONCLUSION

In the IRE Learning Innovation course, the lecturer applied DBL through several stages. First, the lecturer assigns students to innovate by producing a learning media based on digital technology. Second, lecturers set the assessment criteria collaboratively with students. Third, students are given full flexibility to complete the assignment individually. And fourth, as an evaluation, students present the innovation products they have produced at the end of the meeting. The lecturer evaluated the students' creativity achievement based on the innovative learning media produced and presented. The measurement results showed that 53,03% of students reached the very creative category. 30,3% of students were in the creative category. However, there are 16,67% of students who fall into the average category. After being traced, the main reason is due to the limited ability of students to access digital resources.

The author recommends lecturers to apply DBL in courses that are oriented towards achieving students' technical skills. DBL is always centered on developing as well as improving students' skills, including their creativity, which includes aspects of divergent thinking, originality of ideas, perseverance, and intellectual risk-taking. Other researchers are expected to continue similar research, especially with a wider scope of research objects and more varied DBL designs. The author would like to express deep gratitude and appreciation to everyone who has helped in the completion of this research. The author also emphasizes that the results of this research are purely intended for academic purposes, so there is no conflict of interest whatsoever in it.

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