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# THE ROLE OF REAL PROJECTS IN TEACHING DESIGN THINKING TO FUTURE PRIMARY SCHOOL TEACHERS

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**Abstract**
This article examines the essence of the design thinking concept in accordance with contemporary educational requirements, its role in pedagogical practice, and the theoretical and methodological foundations for developing this competency in future primary school teachers. The study analyzes an approach to understanding real educational problems and addressing them through the stages of design thinking. Although no experimental study was conducted, well-grounded conclusions are drawn based on scientific and theoretical evidence.

**Keywords**: Design thinking; project-based activity; school-related problems; primary education.

## Introduction

In the 21st century, the primary goal of education is not limited to the transmission of knowledge, but rather focuses on developing learners' creative, critical, and problem-solving thinking skills. Accordingly, the role of the teacher has evolved from that of a traditional knowledge provider to a facilitator, guide, and collaborative partner in addressing educational challenges. In this context, integrating design thinking into teacher education has emerged as a critical priority in contemporary pedagogical discourse.

Future primary school teachers are expected to possess the ability to identify, analyze, and address real-life educational problems. These competencies can be effectively developed through the design thinking approach, which emphasizes human-centered problem solving. Design Thinking is a methodology that combines empathy, creativity, and analytical reasoning to generate innovative

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solutions to complex problems. Although initially rooted in engineering and technological fields, design thinking has gradually gained recognition in education, business, healthcare, and social innovation.

According to Brown (2009), design thinking represents an open-minded and creative approach to solving complex problems. Similarly, Simon (1969) conceptualizes design thinking as a problem-solving process grounded in human needs and rational decision-making. These theoretical perspectives highlight the relevance of design thinking as a cognitive and methodological framework for teacher education.

This paper argues that the integration of real projects within a design thinking framework significantly enhances the professional readiness of future primary school teachers. The use of real projects in the educational process fosters practical thinking, collaboration, and problem-solving skills among learners. For pre-service teachers, such projects create opportunities to connect theoretical knowledge with authentic educational contexts. Examples of real projects applicable in primary education include:

- Improving Our School Environment;
- Safety Issues in Our Community;
- Our Classroom Ecology.

One of the most common challenges in primary education is the decline in students' learning motivation. In many schools, instructional practices remain predominantly theory-oriented, which often results in passive student participation and reduced engagement. Consequently, the learning process becomes less meaningful and less effective.

The design thinking approach offers a structured and human-centered solution to this problem through the following stages:

**1. Empathy** – gaining a deep understanding of learners' experiences through surveys, interviews, and classroom observations;

**2. Problem Definition** – identifying key issues such as limited student participation and one-sided instructional practices;

**3. Ideation** – generating possible solutions, including game-based learning methods, interactive tasks, and contextually relevant examples;

**4. Prototyping** – designing an innovative lesson model, for instance, a 40-minute lesson scenario based on learning-through-play principles;

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**5. Testing** – evaluating the proposed model through theoretical modeling and comparative analysis with findings reported in previous empirical studies.

Through these stages, educational problems are addressed from a human-centered perspective, leading to more sustainable and effective solutions. As a result, future teachers develop not only the ability to propose pedagogical solutions but also the competence to justify, refine, and adapt their ideas in response to real classroom conditions.

## Comparative Analysis

| Indicator | Traditional Approach | Design Thinking Approach |
|---|---|---|
| Focus of instruction | Teacher-centered | Student-centered |
| Problem analysis | Surface-level | Empathy-based |
| Lesson design | Rigid and standardized | Flexible and adaptive |
| Student participation | Passive | Active and collaborative |
| Teacher's role | Knowledge transmitter | Guide and facilitator |
| Learning outcomes | Knowledge retention | Competency development |

The findings suggest that design thinking serves as an effective methodological framework for preparing future primary school teachers to address real educational challenges. By engaging in empathy-driven analysis, creative ideation, and iterative testing, pre-service teachers develop essential professional competencies aligned with the demands of modern education. Therefore, the integration of design thinking into teacher education programs can be considered a key factor in enhancing the quality, relevance, and effectiveness of primary education.

## Recommendations

✓ Introduce design thinking courses in pedagogical higher education institutions;
✓ Expand the use of project-based learning in primary education;
✓ Develop collections of practical, design thinking–based lesson plans;
✓ Prepare methodological guidelines grounded in design thinking principles.

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