The Impact of Design Thinking on Student Engagement and Team Dynamics in Higher Education

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ABSTRACT

This study investigates the impact of Design Thinking on student engagement and team dynamics within higher education, focusing on diverse undergraduate programs at UNITAR. Design Thinking, a methodology rooted in empathy, iterative learning, and problem reframing, has gained prominence as an educational tool that enhances students' critical thinking, creativity, and collaborative skills. Using a quantitative research approach, data were collected from 342 students across programs such as psychology, business administration, and information technology. Results indicate high levels of engagement and positive perceptions of Design Thinking, with constructs like learning orientation (M = 4.35), experimentation (M = 4.24), teamwork (M = 4.20), and empathy (M = 4.16) scoring prominently. These findings suggest that Design Thinking fosters essential skills and attitudes critical for academic and professional success, supporting its integration into educational frameworks. The study contributes to the growing body of literature advocating for innovative, student-centered pedagogies that align with the demands of the modern workforce.

Keywords: Design Thinking, student engagement, team dynamics, higher education, collaborative learning, empathy, critical thinking, iterative learning, problem-solving skills, educational innovation

INTRODUCTION

The current age of intense technological progress and global connectivity is transforming higher education institutions into agents of student readiness, capable of tackling complex dynamic problems. The outdated methods of teaching, characterized as they are by rote learning and a passive approach to education, have become obsolete because they do not prepare students with vital skills required to excel in a modern workforce that demands critical thinking, creativity, and effective collaboration. The recognition of this gap brought about a wave of educators and institutions that are simply innovating new teaching methods to ensure a more path-altering educational encounter.

Design Thinking has become a powerful tool that enables a human-centered approach to innovation and problem-solving. Born from the design field, this methodology focuses on empathy, experimentation, and iterative learning, making it possible for practitioners, including students, to be creative with real-life circumstances and work as part of a team. The principles behind Design Thinking guide students to learn about the needs of users, clarify the issues, come up with various solutions, create a prototype for various inventions, and test them practically. This way, it brings about a way of thinking which values innovation, resilience, and flexibility, the key qualities in the success of the present world.

At UNITAR, the incorporation of Design Thinking into the educational framework demonstrates a dedication to improving learning outcomes and promoting a culture of creativity and collaboration. By integrating Design Thinking into the curriculum, the institution aims to create students who are knowledgeable and capable of doing complex tasks as well as able to work efficiently in multinational teams. Nevertheless, despite the

possibility of advantage of the approach, there is an absence of concrete investigations into its concrete effects on student learning, problem-solving, and the dynamics of teamwork in the context of higher education.

This research aims to bridge the existing gap by analyzing the impact of the adoption of Design Thinking at UNITAR on students' learning experiences, problem-solving skills, and effective collaboration. This research focuses on these aspects and intends to provide useful information on the effectiveness of Design Thinking as an educational tool, as well as recommendations for enhancing its application in higher education. In the end, this research is supposed to take part in the general discussion about the latest teaching methods that develop the teaching process according to the changes that the 21st-century workforce requires while corresponding with the educational system.

IMPORTANCE OF DESIGN THINKING

Design Thinking has increasingly been recognized as a valuable pedagogical approach in higher education, offering students a practical framework to develop essential skills such as critical thinking, creativity, and collaborative problem-solving. This method encourages students to adopt a user-centered, empathetic approach, enabling them to tackle real-world problems through iterative processes that emphasize understanding and responding to the needs of end-users (Micheli, Wilner, Bhatti, Mura, & Beverland, 2021). According to Liedtka (2021), Design Thinking fosters an environment where students learn by doing, which helps cultivate resilience, adaptability, and a proactive mindset. By embedding empathy and experimentation into the learning process, Design Thinking shifts students away from rote learning toward a more dynamic and engaged mode of inquiry.

One significant advantage of Design Thinking is its emphasis on empathy, a core component that enhances both individual learning and team collaboration. Empathy enables students to gain insights into different perspectives, which facilitates more effective teamwork and problem-solving (Chou, Huang, & Huang, 2022). In team-based educational settings, empathy is instrumental in fostering constructive dialogue and deeper engagement, helping students build stronger interpersonal skills and better prepare for collaborative professional environments (Brown & Katz, 2022). Similarly, Dorst (2021) emphasizes that problem reframing — a central aspect of Design Thinking — encourages students to critically evaluate assumptions and explore alternative solutions, which is crucial for innovation and adaptability in complex, unpredictable situations.

Moreover, recent studies have demonstrated that Design Thinking cultivates an experimental mindset, which is vital for lifelong learning. As students engage in iterative testing and prototyping, they learn to view challenges as opportunities for growth rather than obstacles, reinforcing a growth mindset (Razzouk & Shute, 2022). This orientation not only enhances their problem-solving abilities but also prepares them for the demands of an evolving workforce that values flexibility and continuous improvement (Scheer, Noweski, & Meinel, 2023). In practice, Design Thinking offers a structured yet flexible approach that enables students to navigate ambiguity with confidence, making it a valuable tool for equipping them with skills relevant to contemporary professional settings (Kimbell, 2023).

Furthermore, integrating Design Thinking into educational curricula has been shown to improve student engagement and motivation. Research by Verhulst and Bakker (2021) indicates that students exposed to Design Thinking are more actively engaged in the learning process, which translates into improved academic outcomes and greater satisfaction with their educational experiences. This approach also promotes autonomy and intrinsic motivation, as students take ownership of their learning through active participation in creative problem-solving activities (Goldman, Kabayadondo, Royalty, Carroll, & Roth, 2020). Through this engagement, students are more likely to develop a sense of purpose and confidence in their ability to effect change, which has long-term benefits for both academic and professional success.

In sum, Design Thinking offers a multidimensional framework that addresses key educational outcomes — from enhancing empathy and teamwork to fostering creativity, adaptability, and engagement. The literature consistently highlights its value in preparing students for the complexities of the modern workforce, supporting higher education institutions in their mission to cultivate critical, innovative thinkers (Kimbell, 2023; Micheli et al., 2021; Razzouk & Shute, 2022).

METHODOLOGY

This study employs a quantitative research design to assess the impact of Design Thinking on student engagement and team dynamics in higher education. Data were collected through structured surveys distributed among students enrolled in various undergraduate programs at UNITAR, covering fields such as psychology, business administration, and information technology. The survey included Likert-scale items targeting constructs such as problem reframing, experimentation, team collaboration, empathy, and optimism, allowing us to measure the perceived impact of Design Thinking in each area. Each item in the survey was rigorously validated through a pilot study to ensure reliability and clarity, and internal consistency was evaluated using Cronbach's alpha for all constructs.

Participants in the study were sampled using a stratified random sampling technique to ensure demographic diversity across gender, academic programs, and year of study. Data were gathered from a total of 342 respondents, comprising 31% male and 69% female participants, representing a comprehensive cross-section of the student body. Statistical analyses were performed using SPSS software, enabling both descriptive and inferential evaluations of the data. Descriptive statistics were used to provide a general overview of respondent demographics and central tendencies in the dataset, while inferential techniques, including multiple regression analysis, were employed to test the strength and direction of relationships between Design Thinking principles and student outcomes in engagement and team dynamics.

RESULT & DISCUSSION

Demographic

Table 1: Format of Papers

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	106	31.0	31.0	31.0
	Female	236	69.0	69.0	100.0
	Total	342	100.0	100.0	
Program	B.PSYCH	40	11.7	11.7	11.7
	BBA	211	61.7	61.7	73.4
	BBA	1	.3	.3	73.7
	B.IT	39	11.4	11.4	85.1
	BED	46	13.5	13.5	98.5
	BECE	3	.9	.9	99.4
	B.OE	2	.6	.6	100.0
	Total	342	100.0	100.0	

The demographic analysis in this study provides insight into the composition of participants based on factors such as gender, academic program, and year of study, revealing a diverse and balanced sample conducive to generalizable results. The sample comprises 342 students from various undergraduate programs at UNITAR, with a gender distribution of 31% male (n = 106) and 69% female (n = 236). This distribution reflects a

substantial representation of female students, aligning with recent trends in higher education where female participation has increased in many fields (Wang, Degol, & Ye, 2020). Such representation allows for robust analysis, minimizing the risk of gender-based bias in evaluating the impact of Design Thinking.

Analysis Descriptive

Table 2: Format of Papers

No.	Item	(n) Respondent	Mean (M)
1.	**Tolerance**	342	**3.71**
2.	Problem Reframing	342	4.22
3.	Experimentation	342	4.24
4.	Learning Oriented	342	4.35
5.	Team Working	342	4.20
6.	Empathic	342	4.16
7.	Optimistic	342	4.25
	TOTAL		**4.16**

Table 2 shows that the descriptive analysis. The data analysis reveals significant insights into how Design Thinking influences student engagement and team dynamics within higher education, especially in the context of collaborative learning environments at UNITAR. Analyzing responses from 342 students across various programs, we observe high engagement levels and favorable perceptions of Design Thinking as a methodology for problem-solving and teamwork. Mean scores for primary constructs — such as problem reframing (M = 4.22), experimentation (M = 4.24), learning orientation (M = 4.35), teamwork (M = 4.20), empathy (M = 4.16), and optimism (M = 4.25) demonstrate that the majority of students appreciate Design Thinking for fostering essential skills and positive interpersonal dynamics in team-based projects.

The interpretation of these descriptive statistics aligns with recent studies showing the efficacy of Design Thinking in enhancing cognitive and affective engagement among students. For instance, research by Liedtka (2021) and Razzouk & Shute (2022) underscores how the principles of Design Thinking, such as empathy and iterative experimentation, lead to greater student immersion and sustained interest in learning activities. These authors argue that by centering learning around empathy and real-world challenges, students become more invested in their work, thus increasing intrinsic motivation and engagement (Liedtka, 2021; Razzouk & Shute, 2022).

Moreover, the high mean score in problem reframing (M = 4.22) points to students' enhanced ability to approach challenges from diverse perspectives, which has been recognized as a crucial skill in problem-solving (Dorst, 2021). Dorst's work indicates that reframing a problem often yields innovative solutions that may not be immediately apparent within traditional problem-solving frameworks. This finding is further supported by Kimbell (2023), who states that problem reframing promotes critical thinking and enables students to question assumptions, thus fostering creative and unconventional approaches to complex issues. Consequently, the high score in problem reframing in our study suggests that Design Thinking not only boosts engagement but also deepens cognitive processes that are essential for academic and professional success.

CONCLUSION

The descriptive results reveal that Design Thinking positively impacts key dimensions of student engagement

and collaborative skills among higher education students at UNITAR. High mean scores across constructs such as learning orientation (M = 4.35), teamwork (M = 4.20), and empathy (M = 4.16) indicate that students perceive Design Thinking as an effective method for enhancing both their learning experiences and interpersonal skills in team settings. The consistently high scores in attributes like problem reframing and experimentation further suggest that students value the iterative, exploratory aspects of Design Thinking, which encourage a proactive and adaptable mindset. This alignment of student perceptions with core principles of Design Thinking underscores its potential as a transformative approach within educational settings, equipping students with critical thinking and collaboration skills essential for addressing complex, real-world challenges.

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