USING DESIGN THINKING TO IMPROVE HOW BUSINESS MODEL DESIGN IS TAUGHT IN HIGHER EDUCATION*

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Abstract

This review article explores how design thinking can be used to improve the way business model design is taught in higher education. It explains why traditional teaching methods, such as lectures and case studies, are no longer enough to prepare students for the complex challenges of today's business world. Instead, design thinking is introduced as a human-centered, creative, and practical approach that helps students learn how to create, test, and improve business models. The article shows how the steps of design thinking such as empathy, define, ideate, prototype, and test, can be used to teach students about customer needs and how to develop valuable products and services. It also discusses how tools like the Business Model Canvas and Lean Canvas help students understand and build business models more clearly. The article shares learning outcomes from real examples, showing that students gain skills in problem-solving, teamwork, and creative thinking. It also discusses the challenges of using design thinking, such as teachers being unprepared and

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having limited time in courses. It offers suggestions to help solve these problems. Finally, the article offers guidance for educators, curriculum designers, and future researchers who want to use design thinking to improve business education.

Keywords: Design Thinking, Business Model Design, Higher Education, Innovation Pedagogy, Student Learning Outcomes

Introduction

In today's fast-paced global economy, innovation and entrepreneurship are becoming more important than ever before (Kamkankaew et.al., 2025a). Companies and organizations constantly seek new ways to create value and stay competitive. An important part of this is having a clear and strong business model. A business model shows how a business makes, gives, and gains value (Holzmann et.al., 2020). Without a robust business model, even the most innovative ideas or entrepreneurial ventures may struggle to succeed. This perspective shows the increasing need for people who know how to create, test, and change business models when the market changes or new chances appear (Laudien et.al., 2024). The ability to develop and implement effective business models is now widely recognized as a critical driver of economic growth and sustainability.

Given this economic landscape, higher education institutions, particularly business programs, face a significant responsibility (Kamkankaew, Thanitbenjasith & Sribenjachot, 2024). The higher education institutions must prepare students to meet these contemporary demands effectively (Kamkankaew et.al., 2025b). It is no longer enough for graduates to simply understand traditional business functions. Instead, there is an urgent need to equip them with practical skills in business model design (Vallis & Redmond, 2021). This means that universities and colleges need to develop and

implement teaching methods that foster the ability to think creatively and systematically about how businesses operate and create value. By teaching business model design skills, higher education can help students get ready to support new ideas and build strong businesses in today's economy (Vincett & Farlow, 2008).

Thai higher education faces a significant challenge in effectively teaching business model design (Lasak, Chaichowarat & Saeueng, 2023). For a long time, traditional teaching methods have been the standard. These methods often include lectures and case studies. However, these approaches frequently focus on analyzing business models that already exist. This means students learn about past successes rather than how to create new, innovative models. These older methods can be static, meaning they do not change much or adapt to new business environments (Kamkankaew et.al., 2025c). Thai higher education also tends to be purely analytical, emphasizing numbers and established frameworks without always encouraging creative problem-solving (Kamkankaew, Thanitbenjasith & Sribenjachot, 2024). This approach can limit students' ability to think outside the box and develop truly novel business concepts.

Consequently, there is a growing recognition that new ways of teaching business model design are necessary. Educators and industry professionals see a clear need for pedagogical approaches that are more dynamic and interactive (Clark & Smith, 2008). Students need opportunities to experience the process of designing business models firsthand (Panke, 2019). This means moving beyond just theory and engaging in practical activities. Furthermore, there is a call for more human-centered methods. This involves understanding the needs and perspectives of customers, stakeholders, and society when developing business models (Massa & Tucci, 2013). These new ways of teaching help students learn how to create business models that are new, flexible, and suitable for today's complex world.

Design thinking is a well-regarded framework for solving problems. It guides users through a structured yet flexible process (Meinel & Von Thienen, 2016). This process strongly emphasizes understanding people's needs through empathy. It then encourages generating a wide array of creative ideas, known as ideation. Following this, design thinking involves creating preliminary versions of solutions, which is called prototyping (Cross, 2023). Finally, these prototypes are evaluated through testing to gather feedback and make improvements (Kimbell & Street, 2009). This iterative cycle helps ensure that solutions are user-focused and effective in addressing the core issues at hand. The human-centered approach of design thinking makes it a powerful tool for tackling complex challenges in various fields (Chang & Tsai, 2024).

The principles of design thinking align closely with the task of creating new and effective business models (Martin & Euchner, 2012). Designing a business model means deciding how a business will make, give, and gain value (Lindberg, Meinel & Wagner, 2010). Design thinking offers a structured way to approach this complex task (Luchs, 2015). For instance, the empathy phase helps business designers deeply understand potential customers and their unmet needs, which is key for developing a strong value proposition. The ideation phase allows for the exploration of many different business model possibilities, fostering innovation beyond traditional approaches (Razzouk & Shute, 2012). Prototyping enables the quick and inexpensive creation of testable business model components, such as a new pricing structure or a novel delivery channel (Plattne et.al., 2012). Subsequently, testing these prototypes with real stakeholders helps to validate the assumptions underlying the business model, leading to more robust and market-ready designs (Koh et.al., 2015). This systematic process, rooted in user understanding and iterative development, naturally supports the creation of business models that are not only innovative but also thoroughly validated (Micheli et.al., 2019).

This review article is structured to provide a comprehensive overview of integrating design thinking into higher education business model design pedagogy. The following sections will explore this topic in detail. First, the paper will delve into the conceptual foundations, defining key terms and exploring the theoretical underpinnings of both business model design and design thinking. Next, the review will examine the practical applications of design thinking within business model design pedagogy, showcasing various approaches and examples of how it is being implemented in higher education settings. Finally, the article will discuss the broader implications of this integration. This includes considerations for business educators in their teaching practices, for curriculum designers and administrators in shaping educational programs, and for future research by identifying gaps and suggesting potential areas for further investigation.

Overview of Business Model Design and Design Thinking

Business Model Design

Business model design fundamentally explains how an organization develops and operates to generate worth (Zott & Amit, 2010). It outlines the underlying processes and structures that allow a business to produce something of value for its customers (Teece, 2010). This involves identifying who the customers are, what they find valuable, and how the organization can provide this value effectively (Maurya, 2016). Business model design acts as a blueprint, detailing the core activities, resources, and partnerships necessary to bring a product or service to the market (Osterwalder & Pigneur, 2010). It provides a clear framework for understanding the operational and strategic choices a company makes to achieve its objectives.

Beyond simply creating value, business model design also addresses how an organization delivers that value to its chosen customer segments and

how it subsequently captures a portion of that value, typically in the form of revenue (Johnson, Christensen & Kagermann, 2008). This involves considering the channels through which customers are reached and the relationships maintained with them. Furthermore, business model design specifies the financial aspects, such as cost structures and revenue streams, that determine the organization's profitability and sustainability (McDonald & Eisenhardt, 2020). Therefore, a well-articulated Business Model Design is fundamental for guiding decision-making, fostering innovation, and ensuring the long-term viability of any enterprise by providing a coherent logic for its entire operation.

Key frameworks of prominent tools and their core components.

Business model design is a critical process for any organization. It involves planning how a company will create, deliver, and capture value. In higher education, especially within business programs, teaching students about business model design has become increasingly important. Understanding this concept helps students to think strategically (Kamkankaew, 2025a). They learn to identify how businesses can offer something valuable to customers and how they can make money from it. This knowledge prepares them to analyze existing businesses and to develop new business ideas with a clear plan for success.

A well-known tool for creating business models is the Business Model Canvas, made by Osterwalder & Pigneur (2010). This framework provides a visual chart with nine key building blocks. The Business Model Canvas has nine parts. Customer segments show the groups of people or businesses the company wants to serve. Value propositions explain the products or services that give value to these groups. Channels show how the company talks to customers and gives them the value. Customer relationships describe how the company connects with each group. Revenue streams show how the company earns money from each group. Key Resources are the main things the company

needs to make the model work. Key activities are the important actions the company must do. Key partnerships show the companies or people that help support the model. Cost structure explains all the costs needed to run the business. These parts together show how the business works.

Another important framework, particularly for new ventures and startups, is the Lean Canvas. Maurya (2016) adapted the Business Model Canvas to create this tool, which focuses more on the uncertainties and risks those new businesses face. The Lean Canvas also has nine components, some of which differ from the Business Model Canvas to address early-stage challenges. These components typically include Problem, where the top problems the target customers face are listed. Solution outlines a possible way to solve these problems for the customers. Key Metrics are the important numbers that indicate how the business is doing. The Unique Value Proposition is a simple statement that tells why the product is special and why people should buy it. Unfair Advantage refers to something that cannot be easily copied or bought by competitors. Channels remain similar, describing the path to customers. Customer Segments also identify the target users. Cost Structure details the expenses, and Revenue Streams outline the sources of income. This framework encourages entrepreneurs to quickly identify and validate their core assumptions.

Both the Business Model Canvas and the Lean Canvas are valuable pedagogical tools in higher education for teaching business model design. They provide students with a structured way to understand the different aspects of a business. These frameworks help students to analyze existing business models and to design new, innovative ones. By using these visual tools, students can easily map out complex business ideas and identify key areas for development or improvement. They support a practical way of learning, helping students use what they learn in class in real situations or in their own business ideas.

Ultimately, these frameworks help build a foundational understanding of how businesses can strategically create and sustain value in dynamic environments.

Business model design as a dynamic process

Business model design is not a static activity that is completed once. Instead, it should be viewed as a dynamic and ongoing process. The business environment is constantly changing due to new technologies, shifting customer preferences, and emerging competitors. Therefore, companies must continuously evaluate and adjust their business models to remain relevant and effective. This approach means that the initial design of a business model is just the starting point of a longer journey of refinement and evolution.

A key aspect of this dynamic process involves iteration and the testing of assumptions. Amit & Zott (2015) noted that a new business model is first developed, it is based on a set of hypotheses about customers, value propositions, and how the business will operate. It is very important to systematically test these assumptions in the real world. This often involves creating prototypes or minimum viable products to gather feedback from potential customers. Based on this feedback, the business model is then revised and improved in cycles. This iterative loop of building, measuring, and learning helps businesses to reduce uncertainty and develop a model that truly works.

Wirtz (2020) explained that the ability to adapt is another critical component of dynamic business model design. As a business tests its assumptions and learns from market interactions, it must be prepared to make changes, sometimes significant ones, to its model. This could mean altering target customer segments, modifying the value proposition, or exploring different revenue streams. In some cases, a business might even need to pivot entirely if the initial model proves unviable. Teaching students that business model design is an adaptive process prepares them to be flexible and resilient

business leaders who can navigate the complexities of the modern economy (Nenonen & Storbacka, 2010).

Design Thinking

Design thinking is a problem-solving approach that is becoming increasingly important in many fields (Rowe, 1991), including how we teach business. At its heart, design thinking focuses on the people experiencing a problem (Brown, 2008). This is called human-centeredness. It also relies on working together, which is known as collaboration. Another key aspect is maintaining a positive outlook, or optimism, believing that a solution can be found (Liedtka, 2018). Design thinking also encourages trying out different ideas, which is referred to as experimentation (Plattner, Meinel & Leifer, 2015). Finally, it involves a process of refining ideas multiple times based on feedback and new insights; this is called iteration (Gobble, 2014). These core principles guide the process of developing innovative solutions.

The idea of human-centeredness helps make sure that the solutions created are useful and meet the needs of the people who will use them (Johansson-Sköldberg, Woodilla & Çetinkaya, 2013). Collaboration brings diverse perspectives together, leading to more robust and creative ideas (Wylant, 2008). Optimism is essential for persevering through challenges and complex problems, fostering a belief in the possibility of positive change (Luka, 2014). Experimentation allows for the testing of assumptions and the exploration of various potential solutions in a practical way (Chang & Tsai, 2024). Iteration then allows for continuous improvement, taking what is learned from experiments and using it to make the solution better over time (Verganti, Dell'Era & Swan, 2021). Together, these principles create a dynamic and effective framework for tackling complex issues and designing new business models.

Common models of design thinking

Design thinking is a strong method for solving problems and making new ideas. It is based on a few key principles. These include focusing on people's needs, which is called human-centeredness (Brown, 2008). Working together in teams, known as collaboration, is also key. Maintaining a hopeful and positive attitude, or optimism, helps in finding solutions. Design thinking also involves trying out different ideas through experimentation (Martin & Euchner, 2012). Finally, it uses a process of repeating steps to improve ideas over time, which is known as iteration. These guiding ideas help shape how we approach challenges in designing business models within higher education.

Beyond these core principles, design thinking also follows a structured process. This process is often described in different phases or modes. These phases provide a roadmap for applying the principles of design thinking in a practical way. While different organizations might name these phases slightly differently, they generally cover similar activities. Understanding these common models helps to see how design thinking moves from understanding a problem to creating and testing a solution. These structured approaches are valuable in teaching business model design.

One widely recognized model comes from the Stanford Design School (Liedtka, 2018). This model has five main phases. The first phase is “Empathize,” which focuses on understanding the experiences and feelings of the target users. The second phase is “Define,” which involves clearly stating the problem based on insights from the empathize phase. The third phase is “Ideate,” which includes brainstorming and creating many possible solutions. The fourth phase is “Prototype,” which involves building simple and testable versions of the ideas. The final phase is “Test,” where the prototypes are shared with users to collect feedback and make improvements. This model offers a clear and simple process to follow.

Another influential model is used by the design company IDEO (Brown, 2008). This model usually has three main phases: “Inspiration,” “Ideation,” and “Implementation.” The “Inspiration” phase is about learning from people to understand the problem or opportunity. This is similar to the empathize step in the Stanford model. The “Ideation” phase involves creating many new ideas, like the ideate step. The “Implementation” phase is about making the best ideas real by building, testing, and planning how to use them. This model also shows a clear path from understanding a problem to taking action.

It is important to remember that while these models present the phases in a sequence, the actual practice of design thinking is often not strictly linear. Teams may move back and forth between phases as they learn more. For instance, insights from the testing phase might lead a team back to the ideation phase to develop new ideas, or even back to the empathize phase to better understand user needs. This flexibility and willingness to revisit earlier stages is a core strength of the Design Thinking process and is essential when applying it to complex tasks like business model design pedagogy.

Design thinking mindsets

Design thinking involves more than just following principles and structured phases; it also requires cultivating specific ways of thinking, often called mindsets (Panke, 2019). These mindsets are fundamental attitudes and perspectives that practitioners adopt to navigate the creative problem-solving process effectively (Cross, 2023). Developing these mindsets is essential when integrating design thinking into higher education, particularly for teaching business model design (Matthews, Bucolo & Wrigley, 2011). They help students and educators embrace the unique demands of this approach and foster a more innovative learning environment.

Wylant (2008) noted that ambiguity tolerance, empathy, divergent and convergent thinking and bias towards action are central to design thinking. Ambiguity tolerance is the ability to comfortably face uncertainty and

incomplete information without needing immediate answers, which is common in the early stages of problem exploration. Empathy is the capacity to understand and share the feelings of others, allowing designers to gain deep insights into user needs and perspectives. Divergent thinking encourages generating a wide array of diverse ideas, while convergent thinking helps in analyzing and synthesizing these ideas to select the most promising ones. Finally, a bias towards action emphasizes a preference for learning by doing and trying things out rather than over-analyzing, pushing individuals to build prototypes and test ideas early and often. These mindsets are basic for students to effectively apply Design Thinking to the complex challenge of designing new business models.

The Pedagogical Intersection: Why design thinking for business model design?

The integration of design thinking into business model design pedagogy offers a powerful approach for teaching students how to create and adapt business models (Groeger & Schweitzer, 2020). This connection is strong because the core ideas and steps in design thinking line up well with the problems and tasks involved in designing business models. Design thinking is a process that focuses on understanding people's needs and creating innovative solutions (Verganti, Dell'Era & Swan, 2021). This human-centered approach is very useful when trying to design new business models or improve existing ones (Ghezzi, Balocco & Rangone, 2010). When students learn to use design thinking, they gain a structured yet flexible way to tackle the often complex and uncertain path of developing successful business models (Kamkankaew, 2025b). This method helps them to think creatively and to focus on what customers truly want and need, which is a key starting point for any good business model.

The alignment between design thinking for business model design can be seen clearly when we map the phases of design thinking to specific challenges in business model design (Ghezzi, Cortimiglia & Frank, 2015). For example, the first phase of design thinking, “Empathize”, directly helps in understanding “Customer Segments” and defining a strong “Value Proposition” within the Business Model Canvas. By deeply understanding potential customers – their pains, gains, and jobs-to-be-done – students can identify who their most important customers are and what unique value they can offer them. Following this, the “Ideation” phase in design thinking encourages the generation of many different ideas. This is very helpful for exploring diverse business model options and not settling on the first idea. Students learn to brainstorm various ways to create, deliver, and capture value. Finally, the “Prototyping” and “Testing” phases of design thinking are essential for “Validating assumptions” across all the blocks of the Business Model Canvas. Instead of just assuming a business model will work, students learn to create simple versions of their model, or parts of it, and test them with real users to get feedback. This iterative process of building, testing, and learning helps to reduce risks and build more robust and validated business models.

Employing design thinking in teaching business model design helps students develop several important skills that are essential for creating successful business models (Fjeldstad & Snow, 2018). When students engage in the design thinking process, they are encouraged to think in new and different ways, which fosters creativity. This creativity is important in business model design because it helps students think of new value ideas and different ways to build a business. Design thinking also strengthens critical thinking. Students learn to analyze information, question assumptions, and evaluate the feasibility and viability of different business model ideas (Teece, 2010). This means they don't just accept ideas at face value but learn to look at them closely and decide if they make sense for the business. These abilities to think creatively

and critically are fundamental for designing robust and competitive business models.

Furthermore, design thinking is an excellent method for developing strong problem-solving skills (Kajanus et.al., 2014). Students learn to identify and deeply understand problems from a customer's point of view before jumping to solutions. This is directly applicable to business model design, where understanding a customer's problem is key to designing a compelling value proposition. Collaboration is another key skill enhanced by design thinking. The process often involves working in diverse teams, sharing ideas, and building on each other's insights (Keen & Qureshi, 2006). This teamwork is vital in business model design, as designing a comprehensive business model often requires input from various perspectives. Finally, and perhaps most importantly, design thinking instills a profound sense of customer-centricity (Esau et.al., 2025). By starting with empathy and constantly seeking user feedback, students learn to place the customer at the heart of their business model. This focus ensures that the designed business models are not just innovative but are also genuinely relevant and valuable to the target audience, which is a cornerstone of sustainable business success.

Design thinking fits well with modern educational approaches that emphasize active student involvement, specifically aligning with constructivist and experiential learning theories (Çeviker-Çınar, Mura & Demirbağ-Kaplan, 2017). Constructivist theory says that students learn best by doing activities and thinking about their experiences to build their own understanding and knowledge. Design thinking is a strong example of this in action. When students use design thinking to develop business models, they are not just passively receiving information. Instead, they are actively engaging with the material, building their understanding as they move through the different phases of the design thinking process, such as empathizing with users, defining problems, and

generating ideas (Glen, Suciu & Baughn, 2014). This hands-on nature allows learners to construct meaning from their activities, which is a core idea in constructivist learning.

Similarly, design thinking deeply resonates with experiential learning theory, which highlights the importance of learning through direct experience, followed by reflection. The design thinking process is inherently experiential; students learn by doing (Lor, 2017). They might conduct interviews, create prototypes of business model components, and test their assumptions in real-world or simulated settings. These direct experiences provide rich learning opportunities. Following these experiences, design thinking encourages reflection on what worked, what did not, and why. This cycle of action and reflection helps students to internalize their learning, adapt their thinking, and develop more effective business models. This alignment makes design thinking a powerful pedagogical tool for teaching business model design, as it moves beyond theoretical lectures and engages students in a practical, reflective, and deeply involved learning journey.

Table 1 The use of design thinking for business model design

Aspect	Explanation
Core Purpose	Design thinking helps students learn how to create and improve business models by understanding people's needs and finding creative solutions.
Process Alignment	The steps in design thinking fit well with business model design tasks. For example, Empathize helps define customer segments and value propositions.
Creativity Development	It encourages students to think of many ideas and explore different options instead of choosing the first solution.

Critical Thinking	Students learn to test ideas, check if they make sense, and see if they really work in practice.
Problem-Solving Skills	Students learn to look deeply at customer problems before designing solutions, leading to better and more relevant business models.
Teamwork and Collaboration	Design thinking often requires working in teams, sharing ideas, and learning from each other.
Customer Focus	The process starts with empathy and keeps the customer at the center, making sure business models are valuable and meet real needs.
Active Learning Fit	Design thinking matches modern learning theories, like constructivist and experiential learning, because students learn by doing and reflecting on experiences.

Applying design thinking in business model design pedagogy

Integration strategies & course design

Integrating design thinking into the pedagogy of business model design offers a powerful approach to equip students with essential innovation skills (Linton & Klinton, 2019). The human-centered nature of design thinking encourages a deep exploration of user needs before defining business solutions. This contrasts with traditional approaches that might jump to solutions prematurely. By starting with empathy, students learn to uncover latent needs and pain points. This foundational understanding is a key for developing relevant and impactful business models. Therefore, design thinking serves as a vital precursor and companion to business model design, ensuring that the resulting business models are not just theoretically sound but also grounded in real-world desirability and user value (Tselepis & Lavelle, 2020).

This initial focus on human needs helps students to frame problems effectively and identify opportunities for innovation within the business model.

One common strategy for embedding design thinking involves offering standalone modules that precede direct engagement with business model design frameworks like the Business Model Canvas (Ladachart, Phornprasert & Phothong, 2022). These introductory design thinking modules immerse students in the core principles and iterative processes of design thinking: empathizing with users, defining clear problem statements, ideating a wide range of solutions, developing low-fidelity prototypes, and testing these prototypes to gather feedback (Kumar et.al., 2019). This foundational understanding of the design thinking mindset and its associated tools prepares students to approach the subsequent task of business model creation with a more open, experimental, and user-focused perspective. Having already practiced the art of understanding user needs and generating creative solutions in a dedicated design thinking environment, students are better equipped to populate the blocks of the business model design with more insightful and validated assumptions, rather than relying solely on abstract market research or unverified hypotheses (Matthews & Wrigley, 2017).

Alternatively, a fully integrated pedagogical approach intertwines the phases of design thinking directly with the development of the Business Model Canvas. In this model, each stage of the design thinking process explicitly informs and shapes corresponding elements of the business model (Çeviker-Çınar, Mura & Demirbağ-Kaplan, 2017). For instance, the “Empathize” phase of design thinking is used to deeply understand customer segments and their pains and gains, directly feeding into the “Customer Segments” and “Value Propositions” blocks of the business model design. The “Ideate” phase is employed to brainstorm various ways to deliver value, structure revenue streams, or establish key partnerships. Prototyping and testing are key parts of design thinking. They help improve and check each part of the business model

step by step. The business model canvas is used like a live draft that changes over time with user feedback and learning from experiments. This complete integration ensures that the business model development process is inherently user-centered, agile, and continuously validated from its inception.

Furthermore, project-based courses frequently serve as an effective vehicle for integrating design thinking into business model design pedagogy, centering learning around tangible, real-world challenges (Sarooghi et.al., 2019). In such courses, students undertake projects that require them to apply the entire design thinking cycle to conceptualize, design, and iterate a business model for a new product, service, or social venture (Martin & Euchner, 2012). This experiential learning approach allows students to not only understand the theoretical connections between design thinking and business model design but also to navigate the complexities and uncertainties inherent in innovation. Working in teams, they learn to manage the iterative nature of design, respond to feedback, and pivot their business model based on insights gained through design thinking processes (Meinel & Von Thienen, 2016). This hands-on application helps solidify their understanding of how design thinking can systematically de-risk the innovation process and lead to more robust and viable business models that genuinely address identified user needs.

Pedagogical tools & activities

Empathy phase

In the empathy phase of applying design thinking to business model design pedagogy, several tools and activities are used. These tools help students clearly understand what their target customers need, what problems they face, and what benefits they expect (Vallis & Redmond, 2021). For example, stakeholder maps are utilized to identify all relevant parties involved. Empathy maps and personas are developed to create detailed representations of typical customers and their experiences. Furthermore, students engage in

ethnographic interviews and observation exercises. These activities allow them to gather firsthand insights into customer perspectives and behaviors. The primary goal of these pedagogical tools is to foster a strong sense of empathy (Lindberg, Meinel & Wagner, 2010). This ensures that the subsequent business model design is genuinely customer-centered.

Define phase

Following the empathy phase in business model design pedagogy using design thinking, students move to the define phase. In this stage, the focus is on clearly articulating the core problem that needs to be solved (Nielsen & Stovang, 2015). Educators employ problem framing techniques to help students synthesize the information gathered during the empathy activities. These techniques guide students in identifying specific user needs and insights. A key activity involves crafting Point-of-View statements (Koh et.al., 2015). These statements are carefully constructed to define the challenge from the user's perspective, often linking directly to potential value propositions. This process ensures that the subsequent ideation and prototyping stages are grounded in a well-defined problem and a clear understanding of the value to be delivered.

Ideation phase

After students have clearly defined the problem in the define phase, they enter the ideation phase in business model design pedagogy that incorporates design thinking. This stage is all about generating a wide range of creative ideas. Instructors often use various brainstorming techniques to encourage broad thinking (Groeger & Schweitzer, 2020). For example, the SCAMPER method (Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, Reverse) helps students look at ideas in different ways to create new solutions (Perez Perez, 2025). Bodystorming, where students physically act out scenarios, is another activity used to gain new perspectives and spark ideas (Tselepis & Lavelle, 2020). Additionally, visual thinking tools are frequently applied during this phase. These tools assist students in sketching out and

exploring diverse business model options or variations for different components of a business model. The main goal is to support the creation of many different ideas before choosing the best ones and making simple models.

Prototyping phase

Following the generation of ideas in the ideation phase, the prototyping phase becomes central in applying design thinking to business model design pedagogy. In this stage, students transform their abstract ideas into tangible forms that can be tested and refined. The emphasis is typically on creating low-fidelity prototypes, which are simple and quick to produce (Melles, Howard & Thompson-Whiteside, 2012). Examples of such prototypes include sketched Business Model Canvases that visually outline the business structure. Storyboards are also used to depict user experiences with the proposed business model. Students might engage in role-playing scenarios to simulate interactions and test assumptions (Calma & Davies, 2021). Furthermore, simple value proposition mock-ups are developed to represent the core offering to customers. The creation of minimum viable products or concepts also falls within this phase, allowing for early feedback on the most basic version of a potential business model (Chuenjitwongsa et.al., 2025). These teaching tools help students learn fast, make changes, and improve their business model ideas using clear and simple examples.

Testing phase

After students develop prototypes of their business models, they proceed to the testing phase in design thinking-enhanced business model design pedagogy. This phase is pivotal for gathering feedback and validating the assumptions embedded within their prototypes. Educators guide students to employ various techniques to test their models with potential users or stakeholders (Vallis & Redmond, 2021). Customer interviews are a common method, allowing students to directly ask for opinions and observe reactions to

their business model concepts (Dunne & Martin, 2006). Feedback grids are often used as structured tools to collect and organize the input received. For comparing different versions of a business model component or value proposition, A/B testing concepts can be introduced (Siroker & Koomen, 2015). Additionally, simulated pitches give students a chance to present their business models and get useful feedback, as if they were asking for investment or support (Nielsen & Stovang, 2015). These testing activities help students identify weaknesses, refine their assumptions, and iterate on their business model designs based on real-world input.

Table 2 the pedagogical tools and activities for each design thinking phase in business model design pedagogy

Design Thinking Phase	Tools and Activities
Empathy Phase	Students use stakeholder maps to find all people involved. They make empathy maps and personas to describe customers and their experiences. They do interviews and watch customers to learn about their needs and problems. This helps students really understand users.
Define Phase	Students look at all the information and pick the main problem to solve. They write Point-of-View statements to explain the problem from the customer's side. This helps them know what value to create.
Ideation Phase	Students brainstorm many ideas using methods like SCAMPER. They do bodystorming, acting out situations to find new ideas. They also draw and use visual tools to explore different business model options. The goal

	is to create many ideas before choosing the best ones.
Prototyping Phase	Students turn ideas into simple examples called prototypes. They sketch Business Model Canvases and make storyboards to show how the business works. They role-play and create mock-ups of value propositions. This helps them test ideas quickly and improve them.
Testing Phase	Students show their prototypes to users and get feedback. They do customer interviews and use feedback grids to collect opinions. They might do A/B testing to compare options. Simulated pitches help them practice presenting their business ideas. This helps them find problems and make their models better.

Reported Learning Outcomes

Cognitive Outcome

The reported cognitive learning outcomes from applying design thinking in business model design pedagogy highlight several important gains for students (Calma & Davies, 2021). Students appear to develop enhanced creativity. This means they become better at generating new and original ideas for business models. Furthermore, their problem-solving abilities seem to improve (Dunne & Martin, 2006). They learn to identify challenges within a business concept and find effective solutions. This approach helps students think more innovatively.

Another important cognitive outcome is a deeper understanding of customer-centricity. Students learn to place the customer at the heart of their business model. They begin to truly consider the needs and desires of their

target audience (Kwangmuang, 2024). Additionally, the application of design thinking fosters systems thinking in relation to business models. Students learn to see the business model not as isolated parts, but as an interconnected system (Calma & Davies, 2021). They understand how different components of the business model influence each other. This holistic view is crucial for designing robust and sustainable business strategies.

Affective Outcome

The affective learning outcomes reported in the integration of design thinking into business model design pedagogy show positive changes in students' attitudes and motivation. Observations suggest that this pedagogical approach leads to increased student engagement (Thabmali & Traiwichitkhun, 2025). Students become more actively involved and interested in their learning process. This heightened engagement often translates into greater motivation to learn and succeed in understanding business model concepts. Furthermore, students tend to develop a higher tolerance for ambiguity. They become more comfortable with situations where information is not always clear-cut or where there are multiple possible answers, which is common in real-world business scenarios (Vincett & Farlow, 2008).

Another important affective development is the cultivation of an iterative and experimental mindset. Students learn to see failure as a chance to learn, not as a problem. They become more open to trying new ideas, testing them, and improving their business models using feedback (Glen et.al., 2015). This process of repeated experimentation is central to design thinking. Consequently, these experiences contribute to an increase in entrepreneurial self-efficacy. Students begin to believe more in their own abilities to identify opportunities, develop innovative business ideas, and potentially launch their own ventures (Tselepis & Lavelle, 2020). This growth in confidence is a valuable asset for aspiring entrepreneurs.

Behavioral Outcome

The behavioral learning outcomes from using design thinking in business model design pedagogy highlight strong improvements in how students act and interact during the learning process. One key area of development is improved teamwork and communication skills. Design thinking often involves collaborative activities where students must work together effectively in groups (Nithithanatchinnapat et.al., 2024). Through these interactions, they learn to share ideas, provide constructive feedback, and coordinate their efforts towards a common goal. Students also become better at articulating value propositions. They learn to clearly communicate the unique benefits and worth that their proposed business model offers to customers. This ability to convey a compelling value proposition is essential in business.

Furthermore, a significant behavioral outcome is the creation of more innovative or validated business model proposals. By employing design thinking methodologies, students are guided through processes of ideation, prototyping, and testing (Rungtusanatham et.al., 2004). This structured approach encourages them to think outside the box and develop novel solutions to business challenges. The emphasis on testing and iteration also means that the business model proposals are often more thoroughly examined and validated. Students learn to gather evidence to support their ideas, leading to business models that are not just creative but also have a greater potential for real-world success (Matthews, Bucolo & Wrigley, 2011). This practical application of skills results in tangible and often higher-quality outputs.

Table 3 the reported learning outcomes

Outcome Type	Reported Learning Outcomes
	Students become more creative. They learn to make new and original ideas for business models. Their problem-solving skills improve because

Cognitive Outcome	they learn to find good solutions to business problems. They understand better how to put the customer at the center of their ideas. They also learn to see the business model as a whole system where all parts connect and affect each other.
Affective Outcome	Students feel more engaged and interested in learning. They get better at dealing with situations where answers are not clear. They learn to see failure as a chance to improve. They become more willing to try new ideas and make changes. This helps them believe more in themselves as future entrepreneurs.
Behavioral Outcome	Students improve their teamwork and communication. They learn to share ideas, give feedback, and work well in groups. They also learn to explain the value of their business ideas clearly. They create more creative and tested business model proposals. These proposals are often better because students use evidence and feedback to make them stronger.

Challenges and Limitations

Faculty-Related

Integrating design thinking into business model design pedagogy presents several challenges, particularly concerning faculty members. One significant hurdle is the need for comprehensive faculty training in design thinking methodologies (Godfrey, Illes & Berry, 2005). Many educators may not

have prior experience with this approach. Therefore, institutions should support training programs to help teachers gain the skills and confidence to teach design thinking well. The training should include both the basic ideas of design thinking and how to use them in class when teaching business model creation. Without adequate training, faculty may struggle to guide students through the iterative and often ambiguous design thinking process, potentially hindering learning outcomes (Perez Perez, 2025).

Another key challenge involves shifting the traditional faculty mindset. Design thinking requires educators to move from being expert lecturers to becoming facilitators of learning. This transition can be difficult for some faculty members who are accustomed to a more didactic teaching style. As facilitators, they need to encourage student exploration, embrace uncertainty, and guide students in discovering solutions rather than providing direct answers (Sornnoey & Kaewsritong, 2025). Furthermore, some faculty may resist design thinking due to its perceived lack of structure compared to more traditional pedagogical methods. The iterative and non-linear nature of design thinking can seem chaotic or ill-defined, leading to discomfort and a reluctance to adopt it, despite its potential benefits for fostering innovation in business model design (Tselepis & Lavelle, 2020). Addressing these mindset shifts and perceptions is pivotal for successful implementation.

Student-Related

When applying design thinking within business model design education, several challenges also arise from the student perspective. Students may initially experience discomfort with the ambiguity inherent in the design thinking process. Traditional education often emphasizes clear problems and correct answers (Groeger & Schweitzer, 2020). In contrast, design thinking encourages exploring ill-defined problems and navigating uncertainty. This shift can lead to initial frustration or anxiety for some students as they learn to embrace a more

open-ended approach to problem-solving. Helping students become comfortable with this ambiguity is a key task for instructors. Clear explanations of the process and its value, along with supportive guidance, can help students overcome this initial unease and appreciate the exploratory nature of design thinking (Kumar et.al., 2019).

Furthermore, managing group dynamics effectively presents another significant challenge in design thinking pedagogy. Much of design thinking work is collaborative, requiring students to function well in teams (Lasak, Chaichowarat & Saeueng, 2023). However, differences in personalities, working styles, and levels of engagement can lead to conflicts or uneven contributions within groups. Facilitating productive teamwork and ensuring equitable participation is essential (Vallis & Redmond, 2021). Another concern is the potential for a superficial application of design thinking tools by students. Without a deep understanding of the underlying principles, students might use tools like empathy maps or journey mapping as mere checklist items rather than as means for genuine insight generation (Calma & Davies, 2021). This can limit the effectiveness of the design thinking process in developing innovative and robust business models. Therefore, pedagogy must emphasize the 'why' behind the tools, not just the 'how,' to encourage a more profound engagement with the methodology.

Curriculum and Institutional

Challenges at the curriculum and institutional level also limit the integration of design thinking into business model design pedagogy. One major issue is time constraints within academic semesters. Design thinking requires multiple iterative phases, such as empathy, ideation, prototyping, and testing (Brown, 2008). These steps take time for students to explore problems deeply and develop creative solutions (Sarooghi et.al., 2019). However, standard course schedules are often too short to allow a full design thinking process. This can result in rushed activities or incomplete projects that do not reflect the full

potential of design thinking. Instructors may also find it difficult to balance design thinking with other required course content, making it hard to give design thinking activities the time they need (Groeger & Schweitzer, 2020).

Another limitation is the challenge of integrating design thinking into traditional business curricula. Most programs are structured around lectures, case studies, and exams. Design thinking, by contrast, needs hands-on activities, group work, and flexible learning environments (Lor, 2017). Institutions may not have spaces designed for collaboration, or may lack materials for prototyping and testing ideas (Nielsen & Stovang, 2015). These resource constraints make it harder to apply design thinking effectively. Additionally, curriculum committees and accreditation bodies may be slow to approve new teaching approaches that do not align with conventional assessment methods (Linton & Klinton, 2019). As a result, even when faculty and students are motivated, the lack of institutional support and infrastructure can block meaningful adoption of design thinking in business model design education.

Table 4 Challenges and Limitations **of** applying design thinking in business model design pedagogy

Issue Area	Challenges	Limitations
Faculty-Related	Teachers need strong training in design thinking. Many have no experience with it. Changing from being a lecturer to a learning guide is hard for some teachers.	Some teachers feel design thinking has no clear structure. They may resist using it. Its open and flexible style can feel confusing and uncomfortable.
	Students often feel stressed by the unclear	Students may only use design thinking tools in a

Student-Related	problems and open-ended tasks. Working in teams can cause conflicts or unfair workloads	shallow way. They may see tools as checklists, not as ways to create real insights.
Curriculum & Institutional	There is not enough time in short semesters to complete all steps of design thinking. Teachers struggle to fit design thinking with other course requirements.	Schools may not have spaces or materials for teamwork and prototyping. Traditional programs and exams make it hard to approve new teaching methods quickly.

Assessment Issues on Using Design Thinking to Teach Business Model

Integrating design thinking into how we teach business model design in higher education presents several challenges, particularly in how student learning is assessed (Melles, Howard & Thompson-Whiteside, 2012). One significant issue is the difficulty in evaluating the skills developed throughout the design thinking process, such as empathy and iteration (Sarooghi et.al., 2019). These process-oriented skills are fundamental to design thinking. However, they are not as straightforward to measure as the final outputs, like a completed business model canvas. Educators often find it hard to objectively gauge how well students have developed their ability to understand user needs or how effectively they have refined their ideas through multiple cycles (Dunne & Martin, 2006). This creates a tension between valuing the journey of learning and the traditional focus on concrete results in academic assessment.

Another set of assessment challenges revolves around balancing individual contributions with group performance and establishing clear

evaluation standards for projects driven by design thinking (Sarooghi et.al., 2019). Business model design tasks using design thinking are frequently collaborative, making it complex to distinguish and fairly assess each student's unique input and learning (Chang & Tsai, 2024). Furthermore, the very nature of design thinking, with its emphasis on exploration, experimentation, and sometimes ambiguous pathways, makes it difficult to define precise and universally applicable assessment criteria. Instructors grapple with how to create rubrics that are specific enough to guide students and ensure fairness, yet flexible enough to accommodate the diverse and innovative solutions that design thinking can produce (Groeger & Schweitzer, 2020). This lack of clear benchmarks can lead to inconsistencies in grading and uncertainty for both students and educators.

Evaluating student learning is a vital component when integrating design thinking into business model design education. Instructors in higher education employ a diverse range of assessment strategies. These varied approaches aim to capture the multifaceted learning that occurs. They help to measure both the development of design thinking abilities and the effectiveness of the business models’ students create. Understanding these methods is important for improving teaching and learning in this field, ensuring that students are effectively developing the necessary creative and analytical skills (Linton & Klinton, 2019).

Some assessment approaches concentrate on the students' journey and the development of their thinking processes. For instance, process-folios are often used. These are curated collections of a student's work, gathered throughout the design project, which might include initial sketches, interview notes, and iteration logs. They provide tangible evidence of the student's learning steps, idea generation, and problem-solving efforts. Reflective journals serve a similar purpose. In these journals, students regularly write down their

thoughts, challenges encountered, and insights gained during the design thinking process (Schoormann, Stadtländer & Knackstedt, 2023). These qualitative methods allow educators to assess the depth of student understanding and the authentic application of design thinking principles, rather than just focusing on the final outputs.

In contrast to process-focused methods, other assessments emphasize the evaluation of the final outputs and tangible results of the design process. Prototype evaluations are a common example in this category. Here, the tangible models or early versions of a product, service, or business concept created by students are assessed for their functionality, user-centricity, innovation, and feasibility (Fisher, Oon & Benson, 2021). Pitch presentations also fall into this category. Students present their complete business model proposals to an audience, which often includes instructors, peers, and sometimes external experts. This method assesses their ability to communicate their ideas persuasively and to clearly articulate the value proposition, operational plan, and financial viability of their designed business model. These assessments directly measure the quality and potential effectiveness of the business model design.

Additional methods provide further dimensions to the assessment landscape in design thinking and business model design pedagogy, offering comprehensive insights into student capabilities. Peer assessment is frequently utilized, where students provide constructive feedback on each other's work, such as their concepts, prototypes, or presentations (Ford & Yoho, 2025). This not only helps in evaluating the work from multiple perspectives but also fosters collaborative learning, critical thinking, and communication skills among students. Competency rubrics are also widely reported as an effective and transparent tool. These rubrics clearly define the criteria for success, often detailing different levels of proficiency for specific design thinking skills like empathy, ideation, and experimentation. They also outline clear expectations

for the quality, coherence, and innovation demonstrated in the final business model design. Such structured rubrics ensure that assessments are transparent and consistently applied, providing valuable, detailed feedback to students on their specific strengths and areas needing improvement in both design thinking practice and business model design outcomes (Vallis & Redmond, 2021).

Table 5 Assessment issues on using design thinking to teach business model

Issue Area	Explanation
Difficulty Measuring Process Skills	It is hard to assess skills like empathy and iteration. These skills are important in design thinking. But they are not easy to measure like a finished business model canvas. Teachers struggle to see how well students understand user needs or improve ideas over time. This creates tension between valuing the learning process and focusing on final results.
Balancing Group and Individual Work	Design thinking often involves teamwork. It is difficult to separate each student's contribution. Teachers find it challenging to assess individual effort fairly. This makes grading complex and sometimes unfair.
Lack of Clear Assessment Standards	Design thinking has many possible paths and solutions. It is hard to create one set of rules to assess all projects. Teachers need rubrics that are clear but flexible. Without clear benchmarks, grading can be inconsistent and confusing for students.
Process-Focused Assessments	Some methods look at how students think and learn. For example, process-folios show sketches, notes, and idea changes. Reflective journals let students write

	about their learning. These tools help teachers see the depth of understanding, not just final results.
Output-Focused Assessments	Other methods focus on the final product. Prototype evaluations judge how well the model works, its innovation, and if it fits user needs. Pitch presentations test if students can clearly explain their business model to others. These tools measure the quality of the final design.
Peer Assessment	Students review each other's work. They give feedback on ideas, prototypes, or presentations. This helps students learn to think critically and communicate better. It also gives more viewpoints on the work.
Competency Rubrics	Rubrics describe what good performance looks like. They explain different skill levels in empathy, ideation, and testing. Rubrics make grading clear and fair. They give students detailed feedback on strengths and areas to improve.

Implications

For Business Educators

Integrating design thinking into business model design pedagogy offers significant benefits for preparing students for the complexities of the modern business world. To begin incorporating design thinking elements effectively, educators can start with modest, manageable steps. The primary focus should be on cultivating a design thinking mindset among students, emphasizing empathy for users, a willingness to experiment, and an iterative approach to problem-solving. This foundational mindset is more critical than the mastery of

any specific tool. Once this mindset begins to take root, educators can then introduce appropriate and relatively simple design thinking tools that align with the different phases of the design process, such as empathy mapping for understanding user needs or basic prototyping techniques using readily available materials. This gradual approach allows both educators and students to build confidence and familiarity with design thinking principles before tackling more complex applications in business model design.

A necessary l aspect of successfully implementing design thinking in the classroom is the development of strong facilitation skills by educators. Design thinking processes are inherently iterative and can often feel ambiguous, especially for students accustomed to more structured learning environments. Business educators must therefore be adept at guiding students through this uncertainty, creating a supportive and safe space where exploration and even failure are viewed as learning opportunities. Managing ambiguity involves encouraging divergent thinking during ideation phases, helping students to be comfortable with multiple unresolved questions, and then guiding them toward convergent thinking as they define problems and develop solutions. Effective facilitation ensures that student teams remain productive and engaged despite the non-linear nature of design thinking, fostering resilience and adaptability.

When designing learning experiences, it is important to craft effective design thinking-based business model design activities and assessments that align with the core tenets of design thinking. Activities should be centered around real-world or realistic business challenges, prompting students to apply the design thinking process – empathizing with stakeholders, defining clear problems, ideating innovative solutions, developing tangible prototypes, and testing their business model concepts. Assessments should likewise reflect the process-oriented nature of design thinking, evaluating not just the final business model presented but also the students' application of design thinking

methodologies, their ability to learn from iterations, and their collaborative skills. For instance, assessments could include reflective journals on the design thinking process, presentations of prototyped business models with clear articulation of user feedback and subsequent design choices, or even peer evaluations of teamwork and contribution to the iterative design cycle. This approach ensures that assessment drives learning of both business model design content and the valuable process skills embedded in design thinking.

For Curriculum Designers and Administrators

Integrating design thinking effectively into business model design pedagogy requires a shift away from treating it as a standalone subject. Instead, curriculum designers and administrators should consider embedding design thinking principles across the entire business curriculum. This broader approach allows students to repeatedly encounter and apply design thinking methodologies in various contexts, such as marketing, finance, operations, and strategy. By doing so, students can develop a deeper understanding of design thinking as a versatile problem-solving framework rather than a specialized tool for a single area. Such pervasive integration helps cultivate a design-centric mindset, enabling future business leaders to instinctively apply empathetic, iterative, and innovative approaches to a wide array of business challenges, ultimately fostering more robust and human-centered business model designs. Administrators play a key role in championing this holistic vision and communicating its value in developing adaptable and resourceful graduates.

The practical implementation of curriculum-wide design thinking integration demands careful planning and substantial support for faculty. Curriculum designers must first identify natural points of integration within existing courses and develop learning outcomes that align design thinking skills with subject-specific knowledge. This may involve redesigning course modules, assignments, and overall course structures to incorporate design thinking phases like empathizing with users, defining problems, ideating solutions,

prototyping, and testing. Crucially, administrators need to invest in comprehensive faculty development programs. These programs should equip educators with the knowledge and skills to teach design thinking effectively and to guide students in applying its principles to their specific disciplines. Furthermore, assessment methods may need to be revised to evaluate not just the final outcomes of student work, but also the process of inquiry, collaboration, experimentation, and iteration inherent in design thinking.

Finally, administrators must ensure that the necessary resources and collaborative structures are in place to support a design thinking -infused business curriculum. This includes providing access to flexible learning spaces that facilitate teamwork and creativity, as well as materials for low-fidelity prototyping. Fostering interdisciplinary collaboration, both within the business school and with other departments like design or engineering, can create richer learning experiences and expose students to diverse perspectives essential for innovative business model design. Integrating design thinking across the curriculum is not a one-time project but an ongoing commitment. Administrators should therefore foster a culture of continuous improvement, encouraging faculty to experiment with design thinking integration, share best practices, and iteratively refine the curriculum based on feedback and evolving industry needs, ensuring that business education remains relevant and impactful.

For Future Research

Future research should prioritize more rigorous empirical studies to strengthen our understanding of design thinking's impact in business model design pedagogy. While existing literature suggests benefits, there is a clear need for studies that go beyond descriptive accounts. Comparative studies, for instance, could systematically compare learning outcomes between student groups taught business model design with design thinking integration and those

taught through traditional methods. Furthermore, longitudinal tracking of students who have experienced design thinking -based business model design education would be invaluable. Such studies could follow graduates into their careers to assess the long-term application of design thinking skills in their professional practice and its influence on their ability to develop and adapt business models over time, providing more robust evidence of the lasting value of this pedagogical approach.

Another critical area for future investigation is the development and validation of assessment instruments specifically designed for design thinking competencies within the business model design context. Currently, there is a lack of standardized tools to reliably measure how well students acquire and apply core design thinking skills, such as empathy, ideation, prototyping, and iteration, when designing business models. Future research should focus on creating and testing instruments that can accurately capture these nuanced competencies. Validated assessments would not only allow educators to more effectively gauge student learning and provide targeted feedback but also enable institutions to evaluate the effectiveness of their design thinking-infused business model design programs and make data-driven improvements to their curricula.

The role of technology in supporting design thinking-based business model design education also warrants deeper exploration. Digital collaboration tools, for example, could facilitate teamwork and idea sharing, especially in remote or blended learning environments. Simulation platforms might offer students dynamic, interactive environments to practice applying design thinking principles to complex business model challenges in a risk-free setting. Future research should investigate how different technologies can be effectively integrated into design thinking pedagogy for business model design, examining their impact on student engagement, skill development, and the overall learning experience. This includes identifying best practices for using these tools

to enhance, rather than merely supplement, traditional teaching methods and understanding any associated challenges.

Finally, it is important to investigate the adaptability of design thinking - based business model design pedagogy to different institutional contexts. The effectiveness of specific design thinking teaching strategies might vary significantly depending on factors such as class size, student diversity, available resources, and the overall institutional culture. Research is needed to understand how design thinking approaches can be successfully implemented in large lecture settings versus small seminars, or in fully online programs compared to traditional face-to-face instruction. Studies exploring these contextual factors will help identify flexible pedagogical models and best practices that can be tailored to diverse higher education environments, ensuring that design thinking integration in business model design education is both effective and sustainable across a wider range of institutions.

Conclusions

Integrating design thinking into business model design pedagogy offers a meaningful way to improve how students learn to create, test, and adapt business ideas in a fast-changing world. This approach helps students think more deeply about the needs of users, encourages creativity and teamwork, and teaches them to learn through experience and feedback. By using tools like empathy maps, brainstorming methods, prototypes, and testing techniques, students become more skilled in solving real-world problems and building useful business models. Although there are challenges, such as faculty readiness, student discomfort with uncertainty, and limited time in academic schedules, these can be addressed through strong support, training, and thoughtful curriculum planning. The benefits of using design thinking are clear, it helps students build better skills, understand customers more deeply, and

create more effective and innovative business models. With careful implementation, ongoing research, and proper support, this teaching method can play an important role in preparing students for success in the modern business world.

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