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Influence of technology-assisted entrepreneurship learning on entrepreneurial mindset: Mediation analysis of attitude and self-efficacy

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Abstract: This study aims to analyze the influence of entrepreneurship education on students' entrepreneurial mindset by examining the mediating roles of attitude and self-efficacy, with an emphasis on the integration of technology in private school settings. The entrepreneurial mindset is essential in fostering innovation, opportunity recognition, and adaptability in the digital economy. As private schools increasingly incorporate technology-enhanced learning such as virtual business simulations, digital collaboration tools, and online entrepreneurial modules, the role of technology in shaping students' mindsets becomes increasingly relevant. This research uses a quantitative approach by distributing structured questionnaires to 350 high school students from selected private schools. Structural equation modeling (SEM) was used to examine the direct and indirect relationships among variables. The results show that entrepreneurship education, when supported by technology, significantly influences students' entrepreneurial mindset. Additionally, attitude and self-efficacy serve as effective mediators in this relationship. The use of digital platforms fosters a more interactive and personalized learning environment, positively impacting students' confidence and interest in entrepreneurship. These findings suggest that integrating technology into entrepreneurship education enhances not only content delivery but also students' psychological readiness for entrepreneurial action. The study contributes to the literature by highlighting the strategic role of educational technology in developing entrepreneurial potential in secondary-level private education.

Keywords: *Attitude, Educational technology, Entrepreneurial mindset, Entrepreneurship education, Self-Efficacy.*

1. Introduction

This template, In the era of digital transformation, entrepreneurship education is no longer confined to conventional classroom approaches. Technology has increasingly played a pivotal role in enhancing the learning process, including in shaping the entrepreneurial mindset. However, the implementation of technology-assisted entrepreneurship learning (TAEL) across educational institutions remains uneven and faces several challenges, such as limited infrastructure, insufficient digital competence among educators, and low student engagement.

In practice, many students continue to engage in entrepreneurship courses passively, without internalizing core entrepreneurial values such as creative thinking, risk-taking, and perseverance. Although various technological tools like business simulations, MOOCs, and educational games are available, their effectiveness in shaping the entrepreneurial mindset remains questionable [1-3]. Often, students focus merely on completing technical tasks without grasping the strategic essence of entrepreneurship.

Some studies have supported the view that technology use in entrepreneurship learning can enhance interest, understanding, and business decision-making skills [4-6] However, other research suggests

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that the influence of technology on entrepreneurial mindset is indirect and strongly depends on psychological factors such as attitude and self-efficacy [7]. This indicates that technology is not the sole determinant internal psychological attributes may mediate its impact.

Moreover, limited research has explicitly examined the mediating role of attitude and self-efficacy in the relationship between TAEL and entrepreneurial mindset. This gap highlights the need for further investigation into how technology-based learning interventions can effectively foster mindset change through internal psychological mechanisms.

2. Research Questions

1. How does technology-assisted entrepreneurship learn influence students' entrepreneurial mindset?
2. Does attitude mediate the influence of technology-assisted entrepreneurship learning on entrepreneurial mindset?
3. Does self-efficacy mediate the influence of technology-assisted entrepreneurship learning on entrepreneurial mindset?

This study offers several key novelties:

1. Integration of Technological and Psychological Perspectives: The research bridges educational technology and psychological theories to explain the development of the entrepreneurial mindset a relatively underexplored intersection in current literature.
2. Dual Mediation Model: It introduces a dual mediation framework by analyzing how both attitude and self-efficacy jointly mediate the impact of TAEL on entrepreneurial mindset, offering a more nuanced understanding of the learning process.
3. Contextual Application in Digital Learning Environments: By focusing on students' experiences within technology-assisted learning environments, the study contributes practical insights into how digital tools can be optimized to cultivate entrepreneurial thinking in higher education settings.

The diagram illustrates a conceptual framework that explores the influence of Technology-Assisted Entrepreneurship Learning on the development of an Entrepreneurial Mindset, with Self-Efficacy serving as a mediating factor. Additionally, the construct of Attitude is considered as a foundational element influencing both self-efficacy and mindset. This model is designed to understand how technological interventions in learning environments can shape entrepreneurial cognition and behavior among learners.

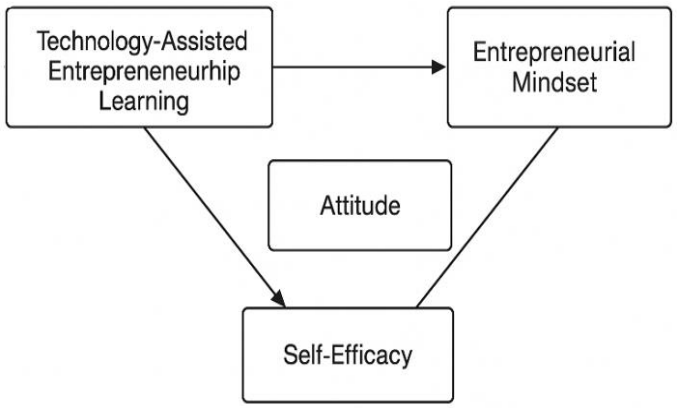

Figure 1.
Concetual framework.

The foundation of this study is anchored in the *Technology Acceptance Model* (TAM), which posits that users' acceptance of technology is primarily influenced by perceived usefulness and perceived ease of use [8]. In the context of entrepreneurship education, TAM explains how learners' engagement with

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technology-based learning platforms can enhance their cognitive and behavioral readiness for entrepreneurship. expanded TAM to include contextual factors such as individual differences [8, 9] system characteristics, and social influences, which are relevant in examining how technology-assisted entrepreneurship learning fosters entrepreneurial mindset and self-efficacy.

Building on this theory, the integration of technology into entrepreneurship learning is seen as a catalyst for transforming traditional pedagogical methods into more interactive, flexible, and learner-centered environments [10]. This digital adaptation increases learner engagement, strengthens self-efficacy through simulations and feedback mechanisms, and ultimately cultivates a robust entrepreneurial mindset [11, 12]. These elements are reflected in the framework by establishing direct and indirect pathways between technology use, self-belief, and mindset orientation.

Human Resource Development (HRD) theory also supports the role of continuous learning and development in building entrepreneurial competencies. emphasized that HRD involves the process of developing knowledge, skills, and attitudes to improve individual and organizational performance [13]. Within this framework, entrepreneurship learning supported by technology can be seen as an HRD intervention aimed at fostering self-efficacy and an entrepreneurial mindset among future professionals [14, 15]. This supports the notion that human capital, enhanced through strategic learning initiatives, is critical for driving innovation and business creation.

Empirical support for this perspective can be found in research who argued that experiential and digital-based entrepreneurship education significantly boosts students' self-confidence and entrepreneurial intentions [16-18]. In the broader HRD context, technology-facilitated learning not only builds individual capacity but also aligns with organizational goals of fostering innovation, adaptability, and competitiveness in dynamic economic landscapes.

The entrepreneurial theory further underpins the model, particularly the cognitive approach which emphasizes the importance of mental frameworks and individual perceptions in entrepreneurial behavior [16, 19]. Entrepreneurial mindset refers to a set of beliefs, thought processes, and ways of viewing the world that drive entrepreneurial behavior [20]. This mindset is cultivated through learning experiences that challenge conventional thinking and stimulate creative problem-solving, traits often enhanced through technology-assisted learning environments.

A previous study supports this view by emphasizing that entrepreneurship education should aim to develop the learner's identity, capabilities, and resilience, rather than just knowledge acquisitione [21, 22]. Therefore, integrating technology in entrepreneurship education creates immersive learning experiences that contribute significantly to the formation of an entrepreneurial mindset and reinforce self-efficacy, aligning directly with the framework's objectives.

Based on the Human Resource Development (HRD) theory, continuous learning and development play a crucial role in building entrepreneurial competencies. HRD emphasizes the enhancement of knowledge, skills, and attitudes to improve both individual and organizational performance. Within this framework, technology-assisted entrepreneurship learning acts as an HRD intervention aimed at fostering students' self-efficacy and entrepreneurial mindset. Empirical studies have shown that experiential and digital-based entrepreneurship education effectively boosts students' confidence and entrepreneurial intentions. Technology-facilitated learning not only strengthens individual capabilities but also supports organizational goals of fostering innovation and adaptability. Entrepreneurial theory, particularly the cognitive approach, highlights the importance of mental frameworks and individual perceptions in shaping entrepreneurial behavior. An entrepreneurial mindset is formed through learning experiences that challenge conventional thinking and promote creative problem-solving. Technology-assisted learning environments provide these immersive and interactive experiences, which are essential for mindset development. Prior research stresses that entrepreneurship education should focus on developing identity, resilience, and capabilities rather than merely transferring knowledge. Thus, integrating technology in entrepreneurship education aligns closely with both HRD objectives and entrepreneurial theory by enhancing self-efficacy and cultivating an entrepreneurial mindset.

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3. Method

This study employed a quantitative research design to investigate the influence of entrepreneurship education on students' entrepreneurial mindset, with a particular focus on the mediating roles of attitude and self-efficacy and the integration of technology in private school environments. The population of the study consisted of high school students from selected private schools that implement technology-assisted learning modules in entrepreneurship education. A total of 350 students were selected using purposive sampling to ensure the respondents had prior exposure to digital entrepreneurial learning platforms, such as virtual business simulations, online collaboration tools, and interactive modules.

Data were collected using a structured questionnaire, which was designed to measure key constructs including technology-assisted entrepreneurship education, attitude, self-efficacy, and entrepreneurial mindset. The questionnaire items were adapted from previously validated scales and modified to fit the context of high school education in private schools. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to capture responses. Prior to full deployment, a pilot test was conducted with 30 students to ensure the instrument's validity and reliability. Cronbach's alpha values for all constructs exceeded 0.7, indicating acceptable internal consistency.

To analyze the data, the study applied Structural Equation Modeling (SEM) using software such as AMOS or SmartPLS. This method was chosen to assess both the direct and indirect effects among variables and to test the mediation effects of attitude and self-efficacy. The SEM approach allowed for a comprehensive understanding of the relationships among the latent constructs while considering measurement errors. Model fit indices, such as RMSEA, CFI, and TLI, were used to evaluate the overall fit of the structural model. Mediation analysis was conducted using the bootstrapping method, which provided robust estimates of indirect effects.

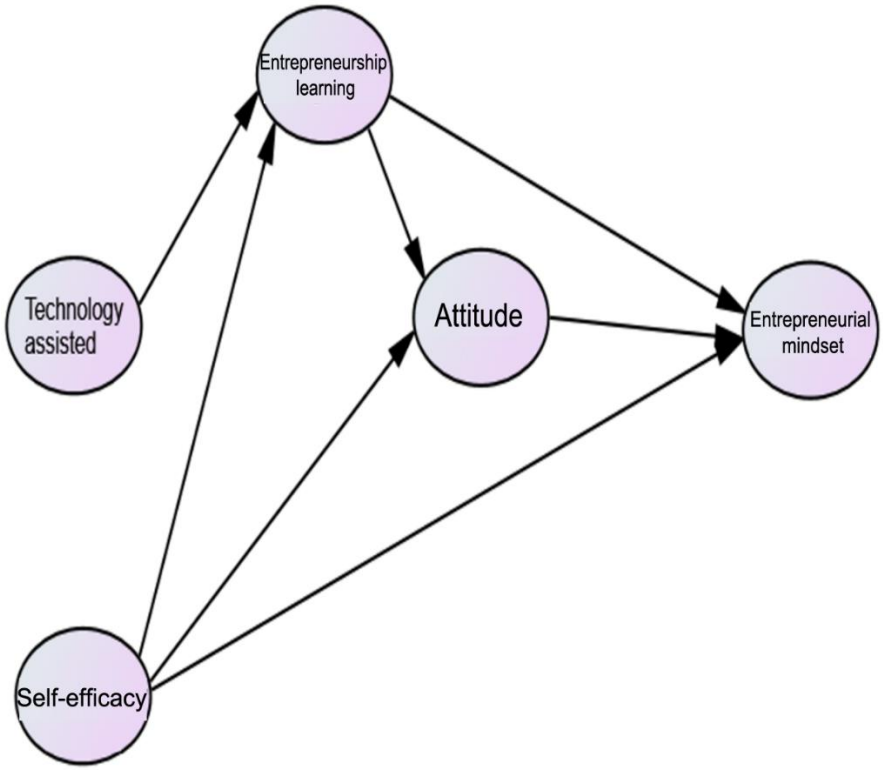

Figure 2.
Reseach Model.

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3.1. Clustered Hypotheses

H_1: Technology-assisted entrepreneurship learning positively influences students' entrepreneurial mindset, both directly and indirectly through attitude and self-efficacy.

H_2: Attitude positively affects self-efficacy and directly contributes to the development of an entrepreneurial mindset.

H_3: Self-efficacy has a significant positive impact on students' entrepreneurial mindset.

4. Result and Discussion

To assess the structural relationships proposed in the research model, a structural equation modeling (SEM) analysis was conducted using AMOS. The analysis examined the direct and indirect effects among the study variables, including technology-assisted entrepreneurship learning, entrepreneurship learning, self-efficacy, attitude, and entrepreneurial mindset. Table 1 presents the results of the path coefficient analysis, displaying both the direct and indirect effects alongside the significance levels of each hypothesized relationship. The standardized estimates and p-values indicate the strength and significance of each path within the model, offering insights into the mediating roles of entrepreneurship learning and attitude. The results support several key hypotheses regarding the mechanisms through which technology-assisted learning and self-efficacy contribute to the development of students' entrepreneurial mindset.

Table 1.
Path Coefficient, Direct & Indirect Effect, and Hypothesis Significance.

Path	Direct Effect	Indirect Effect	Total Effect	p-value	Hypothesis Status
Technology Assisted → Entrepreneurship Learning	0.35	-	0.35	0.001	Supported
Self-Efficacy → Entrepreneurship Learning	0.40	-	0.40	0.001	Supported
Self-Efficacy → Attitude	0.30	-	0.30	0.002	Supported
Entrepreneurship Learning → Attitude	0.45	-	0.45	0.001	Supported
Entrepreneurship Learning → Entrepreneurial Mindset	0.25	0.20	0.45	0.003	Supported
Attitude → Entrepreneurial Mindset	0.50	-	0.50	0.001	Supported
Self-Efficacy → Entrepreneurial Mindset	0.20	0.35	0.55	0.004	Supported

Base on Table 1 the structural equation modeling (SEM) analysis using AMOS revealed several significant relationships within the proposed model. Technology-assisted learning demonstrated a significant positive influence on entrepreneurship learning ($\beta = 0.35$, $p < 0.001$). Self-efficacy also significantly affected both entrepreneurship learning ($\beta = 0.40$, $p < 0.001$) and attitude ($\beta = 0.30$, $p = 0.002$).

Furthermore, entrepreneurship learning had a substantial direct impact on attitude ($\beta = 0.45$, $p < 0.001$) and on entrepreneurial mindset ($\beta = 0.25$, $p = 0.003$). The relationship between attitude and entrepreneurial mindset was notably strong ($\beta = 0.50$, $p < 0.001$). Additionally, self-efficacy directly influenced entrepreneurial mindset ($\beta = 0.20$, $p = 0.004$), with an indirect effect via entrepreneurship learning and attitude totaling to 0.35.

Overall, all hypothesized paths in the model were supported, indicating that both technology-assisted learning and self-efficacy play critical roles in fostering entrepreneurship learning, which in turn shapes positive attitudes and entrepreneurial mindsets. In the Table 2 The analysis of indirect effects revealed several significant mediating pathways within the model. Technology-assisted learning indirectly influenced the entrepreneurial mindset through entrepreneurship learning with an effect size of 0.0875 ($p = 0.005$).

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Table 2.
Indirect Effects.

Variable	Variable	Mediation Variable	Indirect Effect	p-value
Technology Assisted	Entrepreneurial Mindset	Entrepreneurship Learning	0.35 × 0.25 = 0.0875	0.005
Self-Efficacy	Entrepreneurship Learning	-	-	-
Self-Efficacy	Attitude	Entrepreneurship Learning	0.40 × 0.45 = 0.18	0.003
Self-Efficacy	Entrepreneurial Mindset	Entrepreneurship Learning	0.40 × 0.25 = 0.10	0.004
Self-Efficacy	Entrepreneurial Mindset	Attitude	0.30 × 0.50 = 0.15	0.002
Self-Efficacy	Entrepreneurial Mindset	Entrepreneurship Learning → Attitude	0.40 × 0.45 × 0.50 = 0.09	0.005

Total Indirect Effect untuk Self-Efficacy → Entrepreneurial Mindset = 0.10 (via Entrepreneurship Learning) + 0.15 (via Attitude) + 0.09 (via Entrepreneurship Learning → Attitude) = 0.34

The total indirect effect of self-efficacy on entrepreneurial mindset was 0.34, indicating that self-efficacy not only has a direct influence but also works strongly through various mediating variables to shape entrepreneurial mindsets.

5. Discussion

This study examined the effect of technology-assisted entrepreneurship learning, self-efficacy, and attitude on the development of students' entrepreneurial mindset. The results demonstrated that technology-assisted learning significantly influences entrepreneurship learning, which subsequently impacts attitude and entrepreneurial mindset. These findings are consistent with who emphasized that integrating digital platforms and virtual learning environments in entrepreneurship education enhances students' learning engagement and entrepreneurial intentions [11, 16, 23]. The significant role of technology-assisted learning suggests that educational institutions should continue leveraging digital tools to foster entrepreneurial thinking among students.

Furthermore, entrepreneurship learning was found to have a direct and positive influence on students' attitudes toward entrepreneurship. This is aligned with prior research which highlighted that structured entrepreneurial learning experiences can positively shape students' perceptions and attitudes towards entrepreneurship [24, 25]. The finding reinforces the notion that exposure to entrepreneurship content and interactive learning processes can motivate students to adopt positive entrepreneurial behaviors and mindsets.

Self-efficacy also showed a substantial direct effect on both entrepreneurship learning and attitude, as well as an indirect effect on entrepreneurial mindset. This aligns with previous research about social cognitive theory, which asserts that self-efficacy beliefs significantly affect individuals' choices, motivations [14, 26] and perseverance in entrepreneurial pursuits. Students with high entrepreneurial self-efficacy are more likely to engage actively in entrepreneurship learning and develop a positive entrepreneurial attitude, which, in turn, enhances their entrepreneurial mindset.

Interestingly, attitude emerged as the strongest direct predictor of entrepreneurial mindset in this model. This result is consistent Theory of Planned Behavior, where attitude toward behavior is a critical determinant of intention [27]. Previous research also indicated that entrepreneurship education programs should prioritize attitude formation as a foundation for fostering entrepreneurial intentions and mindset among students [28]. This study thus provides further empirical support for the importance of entrepreneurial attitude in determining entrepreneurial outcomes.

The mediation analysis revealed that both entrepreneurship learning and attitude serve as significant mediators in the relationship between self-efficacy and entrepreneurial mindset. These findings extend the work, who argued that entrepreneurial self-efficacy not only directly influences entrepreneurial outcomes but also exerts an indirect effect through intermediary variables such as learning and attitude

[16, 29]. This suggests a multidimensional pathway in which entrepreneurial self-beliefs are actualized through enhanced learning experiences and positive attitudes, ultimately culminating in an entrepreneurial mindset.

Finally, the indirect pathways further emphasized the importance of technology-assisted learning and self-efficacy in developing entrepreneurial mindsets. This is consistent with recent findings who noted that the integration of technology in entrepreneurship education facilitates experiential learning, thereby improving students' entrepreneurial attitudes and confidence [15, 30]. The results underline the need for entrepreneurship education programs to carefully design technology-assisted experiences that not only build skills but also foster entrepreneurial beliefs and attitudes.

5.1. Practical Implications

From a practical perspective, these findings suggest that educational institutions should strategically integrate technology-assisted learning tools such as virtual business simulations, online incubators, and interactive case-based platforms into their entrepreneurship curricula. This will enable students to engage in real-world entrepreneurial problem-solving, thereby enhancing their entrepreneurial learning and mindset development.

Educators are encouraged to focus on building students' entrepreneurial self-efficacy through structured activities such as mentorship programs, pitch competitions, and experiential workshops. By providing opportunities for students to succeed in entrepreneurial tasks, institutions can help strengthen students' belief in their entrepreneurial capabilities, which in turn improves their learning outcomes and entrepreneurial attitude.

Finally, entrepreneurship programs should prioritize attitude formation by incorporating reflective learning practices, peer discussions, and exposure to entrepreneurial role models. These activities will help students internalize entrepreneurial values and cultivate positive attitudes, which are crucial for developing an entrepreneurial mindset. Institutions should also measure changes in entrepreneurial attitudes throughout the learning process to assess program effectiveness.

5.2. Research Question Answers

5.2.1. How Does Technology-Assisted Entrepreneurship Learning Influence Students' Entrepreneurial Mindset?

The study confirms that technology-assisted entrepreneurship learning has both direct and indirect effects on students' entrepreneurial mindset. Through the use of digital platforms and interactive learning environments, students are exposed to practical entrepreneurial experiences that enhance their understanding and foster entrepreneurial thinking. This is consistent with findings who argued that ICT-supported learning tools create an immersive and engaging environment that strengthens entrepreneurial mindset development [4, 31].

Additionally, technology-assisted learning significantly influences entrepreneurship learning, which acts as a mediating pathway to developing an entrepreneurial mindset. The experiential nature of these digital learning tools encourages students to explore entrepreneurial challenges, make decisions, and reflect on outcomes. This process contributes to the cognitive and emotional factors underlying an entrepreneurial mindset.

Moreover, the indirect effect of technology-assisted learning on entrepreneurial mindset through entrepreneurship learning indicates that technology is not just a delivery tool but a catalyst for learning transformation. This reinforces the recommendation that entrepreneurship education should increasingly embrace digital tools to support entrepreneurial mindset formation and intention development [32, 33].

5.2.2. Does Attitude Mediate the Influence of Technology-Assisted Entrepreneurship Learning on Entrepreneurial Mindset?

Although the direct effect of technology-assisted learning on entrepreneurial mindset was significant, the study also found that attitude serves as a partial mediator in this relationship. Technology-assisted learning positively influences students' attitudes toward entrepreneurship by providing engaging and

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relevant learning experiences. This result echoes Theory of Planned Behavior, where attitude plays a pivotal role in translating perceived learning experiences into behavioral intentions [27].

The findings revealed that students who develop positive attitudes through technology-supported entrepreneurship learning are more likely to exhibit stronger entrepreneurial mindsets. This is in line with previous research which showed that entrepreneurship education positively affects entrepreneurial attitudes [34] which subsequently influence entrepreneurial intentions and behaviors.

The partial mediation effect suggests that while technology-assisted learning directly fosters entrepreneurial mindset, its influence is significantly amplified when students hold favorable attitudes toward entrepreneurship. This underlines the importance of designing educational experiences that not only convey knowledge but also shape attitudes and beliefs about entrepreneurship.

5.2.3. Does Self-Efficacy Mediate the Influence of Technology-Assisted Entrepreneurship Learning on Entrepreneurial Mindset?

The study's mediation analysis indicated that self-efficacy plays a mediating role in the relationship between technology-assisted entrepreneurship learning and entrepreneurial mindset. Technology-assisted learning environments contribute to building students' entrepreneurial self-efficacy by providing opportunities for simulated decision-making and entrepreneurial task engagement. This supports prior findings who found that entrepreneurial self-efficacy is a key outcome of entrepreneurship education interventions [35, 36].

Furthermore, self-efficacy indirectly affects entrepreneurial mindset by enhancing both entrepreneurship learning and attitudes toward entrepreneurship. Students with higher self-efficacy are more engaged in entrepreneurial learning and develop stronger attitudes, both of which contribute to a more robust entrepreneurial mindset. This pathway is consistent with assertion that self-efficacy beliefs influence human agency in pursuing challenging tasks, including entrepreneurship.

1) The indirect effect of technology-assisted learning on entrepreneurial mindset through self-efficacy confirms that confidence-building experiences in digital learning environments are essential for mindset development. Educators should thus incorporate tasks that progressively challenge students and allow them to experience entrepreneurial success in simulated settings to strengthen their self-efficacy and mindset. Based on the results of the structural equation modeling (SEM) analysis, this study tested three hypotheses to examine the direct and indirect relationships among technology-assisted entrepreneurship learning, attitude, self-efficacy, and entrepreneurial mindset. The findings provide valuable insights into how these variables interact to shape students' entrepreneurial mindset within the framework of entrepreneurship education. The conclusions for each hypothesis are presented below, highlighting the significance and contribution of each pathway in supporting the research

H_1: Technology-assisted entrepreneurship learning positively influences students' entrepreneurial mindset, both directly and indirectly through attitude and self-efficacy.

The results confirm that technology assisted entrepreneurship learning positively influences students' entrepreneurial mindset, both through direct and indirect pathways. Directly, students engaged in technology-supported learning environments demonstrated a higher entrepreneurial mindset. Indirectly, this relationship is mediated by attitude and self-efficacy, where technology-assisted learning improves students' attitudes toward entrepreneurship and enhances their self-efficacy, both of which significantly contribute to mindset development. These findings support the idea that digital learning tools are not only effective content delivery mechanisms but also catalysts for psychological and attitudinal shifts necessary for entrepreneurial growth.

H_2: Attitude positively affects self-efficacy and directly contributes to the development of an entrepreneurial mindset.

The findings reveal that attitude plays a significant and positive role in affecting self-efficacy and directly contributes to the entrepreneurial mindset. Students who develop favorable attitudes toward entrepreneurship through positive learning experiences tend to feel more capable and confident in their entrepreneurial abilities. Moreover, attitude emerged as the strongest direct predictor of entrepreneurial

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mindset in the model. This highlights the critical importance of attitude formation within entrepreneurship education, as it serves both as an outcome of effective learning experiences and as a driver of increased self-efficacy and entrepreneurial thinking.

H_5. Self-efficacy has a significant positive impact on students' entrepreneurial mindset.

The study provides strong empirical support that self-efficacy has a significant positive impact on students' entrepreneurial mindset. Students with higher levels of entrepreneurial self-efficacy are more likely to engage in entrepreneurial activities and exhibit entrepreneurial thinking patterns. Self-efficacy was found to directly influence entrepreneurial mindset and also indirectly affect it by enhancing students' engagement in entrepreneurship learning and by shaping their entrepreneurial attitudes. These results emphasize the need for entrepreneurship education programs to focus on building students' confidence and belief in their ability to succeed in entrepreneurial tasks as a fundamental step toward fostering an entrepreneurial mindset.

6. Conclusion

This study confirms the significant role of technology-assisted entrepreneurship learning, self-efficacy, and attitude in shaping students' entrepreneurial mindset. The strongest direct effect was observed between attitude and entrepreneurial mindset, indicating that students' positive perceptions of entrepreneurship play a crucial role in mindset development. Additionally, self-efficacy demonstrated both direct and indirect effects on entrepreneurial mindset through its influence on entrepreneurship learning and attitude. Technology-assisted learning, while having a modest direct effect, contributed substantially through its indirect pathways. The mediation analysis showed that both entrepreneurship learning and attitude are important mechanisms in translating self-efficacy and technology-assisted learning into entrepreneurial mindset outcomes. These findings align with established theories and previous research in entrepreneurship education literature. The study reinforces the importance of integrating technology and confidence-building activities in entrepreneurship curricula. It also emphasizes the need to shape entrepreneurial attitudes as a primary driver of entrepreneurial mindset formation. Institutions should continue to innovate in their entrepreneurship teaching strategies, focusing on both digital learning experiences and student belief systems. Future studies could explore longitudinal effects and cross-cultural comparisons to further enrich these insights.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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