

The Role of Self-Efficacy and Mindfulness in Driving Innovative Behaviour Among Entrepreneurship Educators in Higher Education Institutions: A Conceptual Paper

Hadezah Amit^{1*}, Rosli Mahmood², Hishamuddin Md. Som³

¹*Business School, Section of Management and Entrepreneurship, Universiti Kuala Lumpur (UNIKL) 50250 Kuala Lumpur, Malaysia*

²*Putra Business School, Universiti Putra Malaysia (UPM), 43400 Selangor, Malaysia*

ARTICLE INFO

Article history:

Received 30 October 2024
Revised 14 November 2024
Accepted 14 November 2024
Online first 30 November 2024
Published 30 November 2024

Keywords:

self-efficacy
mindfulness
innovative behaviour
entrepreneurship educators
higher education institutions

DOI:

10.24191/smrj.v21i2.28358

ABSTRACT

This conceptual paper highlights the connection between self-efficacy, mindfulness, and innovative behaviour among entrepreneurship educators in higher education institutions (HEIs). Self-efficacy, as articulated in Bandura's Social Cognitive Theory, is considered a crucial factor influencing educators' confidence in adopting and sustaining innovative teaching methodologies. Mindfulness, or present-moment awareness, is identified as a crucial mediator that enhances educators' capacity to adapt, reflect, and regulate their emotions, hence amplifying the influence of self-efficacy on innovative behaviour. The concept posits that entrepreneurship teachers with elevated self-efficacy and mindfulness are more inclined to exemplify the inventiveness, problem-solving abilities, and adaptability essential for preparing students for the intricacies of the contemporary business environment. The document highlights the practical ramifications of professional development programmes that enhance both self-efficacy and mindfulness, along with the way's institutions might facilitate educator creativity. Additionally, the framework advises that subsequent empirical research examine the proposed relationships utilising quantitative methodologies, including structural equation modelling (SEM), and explore the influence of contextual factors such as institutional support. This study contributes to the growing literature on the psychological factors influencing innovative behaviour in education, offering insights into how higher education institutions might more effectively equip educators to excel in dynamic teaching environments.

INTRODUCTION

In recent years, innovative teaching practices within higher education institutions (HEIs), particularly in the context of entrepreneurship education, have been essential for equipping students with the skills and mindset crucial to excelling in competitive and dynamic business environments. However, fostering innovation among educators requires complex challenges, necessitating cognitive flexibility and emotional

^{1*} Corresponding author. *E-mail address:* hadezah@unikl.edu.my
<https://doi.org/10.24191/10.24191/smrj.v21i2.28358>

resilience. Institutional constraints, including limited resources, rigid curricula, and inconsistent support for innovative teaching methods, often exacerbate these challenges (Furnell et al., 2024). The existing literature on educational innovation predominantly emphasizes external factors, resulting in a relative scarcity of research that investigates the internal psychological and emotional drivers facilitating educators' adoption as well as the preservation of innovative behaviours (Wang et al., 2023).

Among these traits, self-efficacy has garnered significant attention for its potential to influence educators' teaching practices, especially in fields like entrepreneurship education (Aboobaker et al., 2023). Building on this foundation, this conceptual paper delves deeper into the relationship between self-efficacy and mindfulness, examining how these critical psychological traits collectively drive innovative behaviour among entrepreneurship educators. By exploring this relationship, the study seeks to bridge existing gaps in understanding how internal traits can enhance educators' capacity for creative and adaptive teaching. Bandura (1977) asserts that self-efficacy is the conviction to achieve particular results. As higher education institutions strive to cultivate an environment of creativity and innovation, understanding how self-efficacy drives these behaviours is crucial. Fostering innovation in higher education, especially entrepreneurship education, is crucial in equipping students to thrive in competitive business environments. To foster entrepreneurial thinking and problem-solving skills in their students, entrepreneurship educators must demonstrate innovative behaviour (Xerri et al., 2010). However, personal traits like self-efficacy and mindfulness often shape both cognitive and emotional resources needed for innovation in teaching.

Studies have shown that mindfulness enhances emotional regulation, resilience, and cognitive flexibility—traits essential for overcoming the challenges associated with innovation (Zangri et al., 2022). By reducing stress and promoting a focused, adaptive mindset, mindfulness can amplify the positive effects of self-efficacy on innovative behaviour. This paper explores the relationship between self-efficacy, mindfulness, and innovation among entrepreneurship educators in HEIs, proposing a conceptual framework that highlights mindfulness as a mediator in this relationship. Parallel to this discourse, the concept of mindfulness has emerged as an important factor in supporting cognitive and emotional processes that enable innovation (Montani et al., 2020). Particularly, mindfulness, emphasizing non-judgemental present-moment awareness, is gaining an appreciation for its role in enhancing adaptability, openness, and resilience—essential qualities for fostering innovation (Sawatzky et al., 2012). Scholars have widely studied self-efficacy concerning performance and motivation, but less focus has been on how mindfulness mediates the relationship between self-efficacy and innovative behaviour in educators (Lindsay et al., 2017).

Despite the increased focus on educational innovation, much of the existing studies focus on external issues such as institutional support and resources. However, according to Wang (2023), the psychological and emotional reasons that drive innovative behaviour among educators, including self-efficacy and mindfulness, remain underexplored. To bridge this gap, this conceptual paper provides a framework that integrates self-efficacy and mindfulness, demonstrating how entrepreneurial educators in higher education can foster creative teaching approaches. By investigating the interaction of these two characteristics, the study provides a better understanding of how educators might be enabled to continuously innovate and adapt in an ever-changing educational environment.

The objectives of this paper are as follows:

1. To examine the influence of self-efficacy on fostering innovative behaviour in entrepreneurship educators.
2. To explore the mediating role of mindfulness in the relationship between self-efficacy and innovative behaviour.
3. To propose a conceptual framework that connects self-efficacy, mindfulness, and innovative behaviour within the context of entrepreneurship education.

LITERATURE REVIEW

Self-Efficacy and Its Role in Education

The concept of self-efficacy is rooted in Bandura's Social Cognitive Theory, which posits that individuals' beliefs in their capabilities significantly influence their motivations and actions (Bandura, 1988). Self-efficacy is critical in determining whether individuals will attempt a task, how much effort they will invest, and how persistent they will be in the face of obstacles. Research on self-efficacy in education has demonstrated its positive influence on both teachers and students, particularly in terms of motivation, performance, and resilience (Li, 2023).

In the context of entrepreneurship education, self-efficacy is a crucial factor that determines educators' willingness to adopt innovative teaching methods. Educators with high self-efficacy are more likely to engage in behaviours that challenge traditional norms, such as implementing experiential learning, incorporating technology into the curriculum, and fostering cross-disciplinary collaboration (Luo et al., 2024). As a result, these educators can create learning environments that encourage students to think critically, take risks, and develop their entrepreneurial skills.

Innovative Behaviour in Higher Education

Innovative behaviour, defined as the deliberate generation, promotion, and implementation of new ideas within a work role or organisation (Scott & Bruce, 1994), plays a pivotal role in shaping educational practices. In the context of higher education, innovative behaviour is reflected in the adoption of new teaching methodologies, the integration of advanced technologies into classroom practices, and the creation of novel curricula that respond to the evolving needs of industry (De Jong & Den Hartog, 2010). For entrepreneurship educators, innovative behaviour is particularly critical, as they must continuously update their teaching strategies to provide students with the skills necessary to thrive in today's competitive and dynamic business environment. This involves not only teaching entrepreneurial concepts but also modelling the innovative behaviours students are expected to emulate in their professional careers. By engaging in innovative teaching practices, entrepreneurship educators foster environments that encourage critical thinking, creativity, and problem-solving—key components for entrepreneurial success (Ratten & Jones, 2020).

Key factors that encourage innovative behaviour in educational settings have been identified, including institutional support, access to resources, and professional development opportunities. Ng and Lucianetti (2015) found that institutional environments provide adequate resources, access to cutting-edge technology, and continuous professional development, significantly enhancing educators' willingness and capacity to innovate. Similarly, Harris and Schlenker (2018) noted that the presence of a supportive leadership culture in educational institutions, one that rewards risk-taking and experimentation, plays a vital role in promoting innovation among educators. These factors enable educators to feel supported and confident in trying new teaching methods and integrating innovative tools into their curricula. In addition to these external factors, one of the most significant internal factors that influence innovative behaviour is self-efficacy. Educators with high self-efficacy are more likely to embrace changes and innovations in their teaching practices as they believe in their ability to implement new approaches effectively (Wei et al., 2020).

The Relationship Between Self-Efficacy and Innovative Behaviour

Studies consistently show a strong positive relationship between self-efficacy and innovative behaviour across various professional fields, including education. Educators with high self-efficacy are more likely to take the initiative in adopting new teaching methods, collaborating with colleagues on interdisciplinary

projects, and experimenting with emerging technologies (Kohler, 2019). This is especially important in entrepreneurship education, where fostering an environment of creativity and innovation is essential to student success. According to Varlik et al. (2024), educators who believe in their ability to innovate tend to create a classroom atmosphere that encourages critical thinking, creativity, and entrepreneurial problem-solving.

While this link between self-efficacy and innovative behaviour is well-established, there is a gap in research specifically addressing entrepreneurship educators in higher education institutions (HEIs). Given the unique challenges faced by entrepreneurship educators, such as the need to stay ahead of industry trends and continuously innovate, this paper seeks to explore how self-efficacy drives innovation in this context. The proposed conceptual framework aims to help HEIs develop strategies to foster self-efficacy among their academic staff, thereby promoting innovation in educational practices.

Mindfulness and Innovative Behaviour

Mindfulness, defined by Kabat-Zinn (2023) as the awareness of the present moment without judgement, has been extensively studied for its role in enhancing creativity and innovation. Mindfulness promotes cognitive flexibility, emotional regulation, and stress management, which are critical for generating novel ideas and adapting to new teaching environments. Henriksen et al. (2020) found that mindfulness practices improve educators' ability to think creatively and adaptively, enabling them to explore new teaching methods and technologies. This flexibility is particularly important for entrepreneurship educators, who must constantly adjust their strategies to keep up with the fast-changing business environment. Furthermore, mindfulness has been shown to reduce stress and burnout, both of which are significant barriers to innovation in educational settings. Kroon et al. (2017) demonstrated that mindfulness training in organisations significantly enhanced employees' creative problem-solving skills and innovative performance.

In addition to reducing stress, mindfulness fosters emotional regulation, helping educators navigate the uncertainties and challenges that often accompany innovation. Zolkoski and Lewis-Chiu (2019) observed that mindfulness improves educators' resilience in the face of setbacks, enabling them to persist with innovative practices. This emotional regulation is crucial in sustaining long-term innovative behaviour, especially when new teaching methods encounter institutional resistance or resource constraints.

The Interaction Between Self-Efficacy and Mindfulness

While both self-efficacy and mindfulness independently contribute to innovative behaviour, their combined effects may lead to even greater outcomes. Self-efficacy provides educators with the confidence to engage in creative practices, while mindfulness enhances their ability to focus, reflect, and remain open to new ideas. Brown and Ryan (2013) suggested that mindfulness supports the self-awareness and adaptability necessary for educators to effectively apply their self-efficacy in fostering innovation. This synergy helps educators critically evaluate their teaching practices and make continuous improvements that drive innovation.

However, the interaction between self-efficacy and mindfulness is complex and warrants further exploration. Ranihusna et al. (2021) suggested that mindfulness may enhance the effects of self-efficacy by promoting emotional regulation and reflective thinking, which are essential for managing the risks and uncertainties associated with innovation. By fostering resilience and adaptability, mindfulness ensures that educators remain open to change, even when faced with challenges. This dynamic interaction creates a feedback loop where educators' confidence in their abilities (self-efficacy) is supported by their capacity for reflection and emotional regulation (mindfulness), ultimately leading to more sustained and impactful innovative behaviour.

CONCEPTUAL FRAMEWORK

This paper presents a conceptual framework based on Social Cognitive Theory (Bandura, 1988), highlighting that human behaviour emerges from a constant, dynamic connection across personal, behavioural, and environmental factors, commonly referred to as triadic reciprocal causation. In this context, self-efficacy, defined as the belief in one's ability to organise and execute actions necessary to handle future situations, serves as a significant personal factor affecting entrepreneurial educators' propensity to adopt innovative behaviours (Bandura, 1988). Empirical evidence indicates that self-efficacy enhances individuals' capacity to overcome challenges and fosters resilience, creativity, and adaptability in uncertain environments, all of which are essential for fostering innovation (Bullough et al., 2014; Hartmann et al., 2022).

By integrating SCT's principles, this framework postulates that entrepreneurial educators with high self-efficacy are more likely to adopt and implement innovative pedagogical practices and curricula, as driven by Social Cognitive Theory (SCT) principles. This is because self-efficacy affects cognitive, motivational, affective, and selection processes, prompting educators to continue their innovative efforts despite potential barriers or resistance within their institutional settings (Bandura, 2011; Klassen & Usher, 2010; Yada et al., 2022). Moreover, environmental factors, such as organisational support, resources, and cultural norms, further moderate the relationship between self-efficacy and innovative behaviour by either enabling or constraining the opportunities available for educators to act upon their innovative impulses (Chen, 2024; Purc & Lagun, 2019).

Thus, this conceptual framework is scientifically rigorous, as it not only aligns with the core tenets of SCT but also draws from a robust body of literature linking self-efficacy with innovative behaviour in educational contexts (Luo et al., 2024; Thurlings et al., 2015). This approach allows for a comprehensive examination of how personal beliefs and environmental dynamics interact to shape the innovative behaviours of entrepreneurship educators, ultimately contributing to advancements in teaching practices and learning outcomes.

Key Components of The Conceptual Framework

Self-efficacy, a core element of Bandura's (1986) Social Cognitive Theory, refers to an individual's belief in their ability to perform tasks and achieve goals. In the educational setting, self-efficacy has been shown to significantly influence educators' motivation and willingness to innovate. According to Schallert et al. (2022), teachers with higher self-efficacy are more likely to adopt new teaching methods and experiment with innovative approaches, as they are confident in their ability to overcome potential challenges. This is particularly important for entrepreneurship educators, who must continuously adapt their teaching strategies to stay aligned with the evolving nature of the business world (Van Rijnsoever et al., 2023). Additionally, educators with high self-efficacy are more likely to integrate technology into their classrooms, fostering an environment where students can explore creativity and innovative thinking (Gomez et al., 2022).

Innovative behaviour is the process through which individuals generate, promote, and implement new ideas, which is crucial in the context of entrepreneurship education (Saura et al., 2023; Scott & Bruce, 1994). For educators, this can include the development of new curricula, interdisciplinary collaboration, or the adoption of emerging technologies. Innovative behaviour in education has been linked to improved learning outcomes, as it encourages active learning, critical thinking, and adaptability in students (Mubarak & Selimin, 2023; Ng & Lucianetti, 2015). Entrepreneurial educators, who often act as role models for innovation, play a crucial role in preparing students to navigate the complexities of the modern business environment. Moreover, as higher education moves towards more flexible, technology-driven learning

environments, educators must engage in continuous innovation to ensure the relevance and quality of their programmes (Müller et al., 2023).

The relationship between self-efficacy and innovative behaviour is influenced by several moderating factors, such as institutional support and external pressures. Institutional support, which includes access to resources, professional development, and a culture that promotes innovation, has been shown to positively affect educators' willingness to innovate (Wei et al., 2020). For instance, when educators have access to the latest technological tools and receive encouragement to take risks, they are more likely to engage in innovative practices (Stumbrienė et al., 2024). On the other hand, external pressures such as heavy workloads, limited time, and insufficient funding can act as barriers, discouraging educators from pursuing innovation (Mieres-Chacaltana et al., 2021). Understanding the role of these moderating factors is critical for higher education institutions to create environments that support both self-efficacy and innovative behaviour.

By improving cognitive flexibility, emotional regulation, and reflective practices, mindfulness—which Zhang et al. (2023) define as the awareness of the present moment without passing judgement—acts as a mediator between self-efficacy and creative activity. High self-efficacy teachers may be confident in their skills, but mindfulness makes sure that this confidence results in meaningful action by encouraging receptivity to new ideas and flexibility in instructional strategies (Rubach & Lazarides, 2021). Mindfulness-induced cognitive flexibility motivates teachers to experiment with and apply cutting-edge strategies like multidisciplinary collaboration or emerging technologies (Montani et al., 2020). Furthermore, educators can better manage the stress and uncertainty that frequently accompany innovation by practicing mindfulness, which helps them maintain their efforts even in the face of setbacks (Squyres, 2023). To keep their innovations relevant in ever-changing educational environments, educators can also regularly evaluate and modify their teaching tactics through reflective practices that are strengthened by mindfulness (Suphasri & Chinokul, 2021). This mediation role is supported by empirical research, which demonstrates that mindfulness helps educators remain resilient and adaptable, hence amplifying the positive benefits of self-efficacy on innovation (Oh et al., 2022). Consequently, mindfulness helps educators translate their confidence into consistent and successful innovative behaviour by bridging the gap between intention and implementation.

This framework cultivates a creative culture in entrepreneurial education programmes, enhancing student outcomes through the integration of self-efficacy, mindfulness, and inventive behaviour. When educators foster an environment that promotes these attributes, they are more capable of equipping students with the skills essential for success in today's rapid and competitive business landscape (Premalatha & Subadevi, 2024). Mindfulness improves educators' capacity to adapt, reflect, and innovate, rendering their instruction more sensitive to student needs and cultivating resilience amidst adversities. Foster and Yaoyuneyong (2016) asserts that instructional innovation enhances student engagement, elevates academic performance, and equips pupils more proficiently for real-world issues. Entrepreneurship educators exemplify mindfulness, innovation, and self-efficacy, thereby motivating students to engage in critical thinking, foster creativity, and cultivate entrepreneurial mindsets—attributes vital for success in the contemporary economy (Pradikto, 2024).

Based on the above discussion, the following framework is proposed:

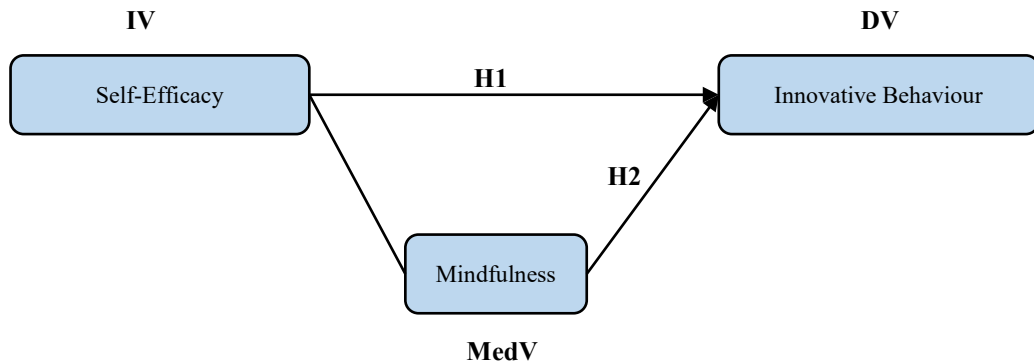


Fig. 1. Conceptual Framework of the Study

METHODOLOGY

This conceptual paper uses a quantitative approach because it is best suited for empirically investigating the relationships between self-efficacy (independent variable), mindfulness (mediator), and innovative behaviour (dependent variable). Quantitative research is advantageous because it allows for the collection and analysis of numerical data, which aids in hypothesis testing and the identification of statistically significant relationships between variables (Garrido-Moreno et al., 2024; Hair et al., 2019; Xerri et al., 2010). This approach provides a robust and objective method for assessing the strength and direction of these relationships, with results applicable to higher education.

Qualitative methods are less appropriate for this study because they aim to quantify the impact of self-efficacy on innovative behaviour and assess mindfulness's mediating role. Qualitative research typically investigates subjective experiences, perceptions, and the nuanced 'how' or 'why' of a phenomenon using methods such as interviews, focus groups, or thematic analysis (Oranga & Matere, 2023). While these methods add depth and context, they lack the statistical data required for hypothesis testing or establishing generalisable patterns across larger populations.

As a result, a quantitative approach is more consistent with the study's goal of empirically testing relationships between variables and producing data that support statistically significant conclusions. Structural equation modelling (SEM) will be used to address the inherent complexity of the proposed relationships. SEM is particularly useful for analysing complex models with multiple predictors and mediators (Hair et al., 2019). This technique enables simultaneous testing of direct and indirect effects, resulting in a comprehensive understanding of how self-efficacy influences innovative behaviour, both independently and through the mediating role of mindfulness. This study uses SEM to accurately estimate and confirm the strength and significance of these pathways. This allows us to better understand how psychological traits influence the creative behaviour of entrepreneurship teachers. To achieve the study's objectives, the quantitative approach along with SEM gives real-world examples of how variables are related, lets researchers test their hypotheses, and gives in-depth information about how mindfulness plays a role in mediating. This method bases the findings on rigorous statistical analysis, which improves the reliability and validity of the proposed conceptual framework (Hair et al., 2019; Sarstedt et al., 2020).

DISCUSSION

Based on the review of existing literature, most research on innovative behaviour in education has focused on external factors such as institutional support, resource availability, and professional development. However, the psychological drivers of innovation, particularly the roles of self-efficacy and mindfulness, have received less attention. This conceptual paper highlights the need to explore how these internal psychological factors influence educators' ability to engage in innovative practices. In particular, entrepreneurship educators, who are expected to model creativity and adaptability, may benefit significantly from developing strong self-efficacy and mindfulness. Research shows that educators with high self-efficacy are more confident in their ability to implement innovative teaching methods, adapt to new technologies, and create dynamic learning environments. Self-efficacy, as derived from Bandura's Social Cognitive Theory (1988), empowers educators to overcome obstacles and persist in their efforts to innovate. However, high self-efficacy alone may not be sufficient in complex educational environments that require continuous adaptation and resilience. This is where mindfulness plays a critical role.

Mindfulness, defined as present-moment awareness without judgement (Jankowski & Holas, 2014), enhances cognitive flexibility and emotional regulation, allowing educators to remain open to new ideas and manage the stress that often accompanies innovation. In dynamic educational settings, where the pressure to innovate is high, mindfulness can help educators remain resilient, reflect on their practices, and approach challenges with a constructive mindset. While self-efficacy provides the foundation for action, mindfulness ensures that these actions are thoughtful and sustainable, promoting a balanced approach to innovation (Manchanda et al., 2023). The interaction between self-efficacy and mindfulness has the potential to foster a more holistic form of innovative behaviour. As educators grow more confident in their abilities, mindfulness allows them to maintain emotional balance and adaptability, particularly when faced with setbacks or resistance to new teaching methods (Jiménez-Picón et al., 2021). This is especially important in entrepreneurship education, where the ability to model entrepreneurial thinking—characterised by creativity, risk-taking, and problem-solving—is critical for student success.

Despite the growing interest in understanding the psychological aspects of innovation, the literature has not sufficiently addressed how mindfulness acts as a mediator between self-efficacy and innovative behaviour. By integrating these two psychological constructs, this framework offers a new perspective on how entrepreneurship educators can enhance their capacity for innovation. However, it is important to acknowledge that external factors, such as institutional support and resources, also play significant roles in shaping innovative behaviour (Rattanawichai et al., 2023). The interplay between internal psychological factors and external influences remains an area for future research.

In summary, this conceptual framework suggests that developing both self-efficacy and mindfulness can lead to more sustained and impactful innovation in higher education. Educators who possess both the confidence to innovate and the mindfulness to adapt are better equipped to navigate the complexities of modern educational environments, ultimately benefiting their students by fostering entrepreneurial mindsets. However, further empirical research is necessary to test these propositions and explore the broader applicability of the framework across various educational contexts.

LIMITATION

As this paper is conceptual, the discussions presented are based solely on existing literature and theoretical arguments. The framework focuses on the relationship between self-efficacy, mindfulness, and innovative behaviour among entrepreneurship educators in higher education, yet several limitations must be acknowledged.

Firstly, the framework highlights self-efficacy and mindfulness as primary drivers of innovative behaviour but omits other critical factors such as institutional support, leadership, and organisational culture. These external factors can significantly impact educators' capacity and willingness to innovate. Future researchers may wish to explore how these factors interplay with internal psychological traits to provide a more comprehensive understanding of innovative behaviour.

Secondly, as this is a conceptual framework, it lacks empirical validation. Although the proposed relationships between self-efficacy, mindfulness, and innovative behaviour are grounded in literature, future studies should empirically test the framework. Quantitative research methods, such as structural equation modelling (SEM), could be used to assess the actual influence of mindfulness as a mediator between self-efficacy and innovation, offering concrete evidence to support or refine the framework.

Thirdly, the framework's contextual specificity limits its generalisability. This model is tailored to entrepreneurship educators in higher education, but the dynamics of self-efficacy, mindfulness, and innovation might vary significantly in other fields or educational settings. Future researchers should explore whether the relationships identified in this framework apply to educators in different disciplines or institutions across different cultural contexts.

Lastly, the reliance on self-report data poses potential biases. Self-report survey, often used to measure constructs like self-efficacy, mindfulness, and innovative behaviour, may be subject to social desirability bias, where participants might overestimate their mindfulness or innovative efforts. Future research could complement survey data with qualitative methods, such as interviews or direct observations, to provide a more nuanced and accurate understanding of educators' behaviours.

In summary, while this conceptual framework offers valuable insights, future research is essential to empirically validate its propositions and expand its applicability across diverse educational contexts.

CONCLUSION

In conclusion, this conceptual paper presents a framework that positions self-efficacy and mindfulness as central drivers of innovative behaviour among entrepreneurship educators. Self-efficacy provides educators with the confidence and motivation needed to engage in innovative practices, while mindfulness enhances their ability to remain adaptable, reflective, and emotionally regulated. Together, these constructs foster a balanced and flexible approach to teaching innovation, which is particularly crucial in entrepreneurship education, where educators must model creativity and problem-solving for their students. The implications of this framework are significant for higher education institutions (HEIs). To cultivate innovation among educators, institutions should prioritise professional development programmes that enhance both self-efficacy and mindfulness. By equipping educators with these psychological tools, institutions can not only improve teaching innovation but also create more dynamic and engaging learning environments that better prepare students for the challenges of the modern business world.

Future research should focus on empirically testing the proposed relationships using robust quantitative methods such as structural equation modelling (SEM) to confirm the mediating role of mindfulness in the relationship between self-efficacy and innovative behaviour. Additionally, expanding this framework to include external factors such as institutional support or organisational culture could offer a more comprehensive understanding of what drives innovation in educational settings. By addressing these areas, this conceptual framework has the potential to provide valuable insights into how educators can enhance their innovative capacities and how institutions can support this process, contributing to a richer understanding of innovation in entrepreneurship education.

ACKNOWLEDGEMENTS/FUNDING

The authors would like to acknowledge the support of Universiti Kuala Lumpur (UniKL) Business School and Section of Management and Entrepreneurship, Universiti Putra Malaysia (UPM) Putra Business School, Malaysia for providing the facilities and financial support of this research.

CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Hadezah Amit carried out the research, wrote and revised the article. Rosli Mahmood and Hishamuddin Md. Som conceptualised the central research idea, provide the theoretical framework as well as supervised research progress.

REFERENCES

- Aboobaker, N., D, R., and K.A, Z. (2023). Fostering entrepreneurial mindsets: the impact of learning motivation, personal innovativeness, technological self-efficacy, and human capital on entrepreneurial intention. *Journal of International Education in Business*, 16(3), 312–333. <https://doi.org/10.1108/JIEB-10-2022-0071>
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioural change. *Psychological Review*, 84(2), 191–215. <https://educational-innovation.sydney.edu.au/news/pdfs/Bandura%201977.pdf>
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ.
- Bandura, A. (1988). Self-regulation of motivation and action through goal systems. In V. Hamilton, G. H. Bower, N. H. Frijda, (eds) *Cognitive perspectives on emotion and motivation*. NATO ASI Series, vol 44. Springer. https://doi.org/10.1007/978-94-009-2792-6_2
- Bandura, A. (2011). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9–44. <https://doi.org/10.1177/0149206311410606>
- Brown, K. W. and Ryan, R. M. (2013). The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being. *Journal of Personality and Social Psychology*, 84(4), 822–848. <https://doi.org/10.1037/0022-3514.84.4.822>
- Bullough, A., Renko, M., and Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self-efficacy for entrepreneurial intentions. *Entrepreneurship: Theory and Practice*, 38(3), 473–499. <https://doi.org/10.1111/etap.12006>
- Chen, Y. (2024). Teacher Autonomy, Creative self-efficacy, and innovative behaviour: Perspectives from Chinese University EFL teachers. *Arab World English Journal*, 15(2), 73–86. <https://doi.org/10.24093/awej/vol15no2.5>
- De Jong, J., and Den Hartog, D. (2010). Measuring innovative work behaviour. *Creativity and Innovation Management*, 19(1), 23–36. <https://doi.org/10.1111/j.1467-8691.2010.00547.x>

- Foster, J., and Yaoyuneyong, G. (2016). Teaching innovation: Equipping students to overcome real-world challenges. *Higher Education Pedagogies*, 1(1), 42–56. <https://doi.org/10.1080/23752696.2015.1134195>
- Furnell, M., Van Gordon, W., and Elander, J. (2024). Calmer, kinder, wiser: A novel threefold categorization for mindfulness-based interventions. *Mindfulness*, 15, 144–156. <https://doi.org/10.1007/s12671-023-02273-7>
- Garrido-Moreno, A., Martín-Rojas, R., and García-Morales, V. J. (2024). The key role of innovation and organisational resilience in improving business performance: A mixed-methods approach. *International Journal of Information Management*, 77, 102777. <https://doi.org/10.1016/j.ijinfomgt.2024.102777>
- Gomez, F. C., Trespalacios, J., Hsu, Y.-C., and Yang, D. (2022). Exploring teachers' technology integration self-efficacy through the 2017 ISTE standards. *TechTrends*, 66(2), 159–171. <https://doi.org/10.1007/s11528-021-00639-z>
- Hair, J. F., Risher, J. J., Sarstedt, M., and Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Harris, R., and Schlenker, K. (2018). An exploratory study of “best practice” in environmentally sustainable event management in Australian public events. *Event Management*, 22(6), 1057–1071. <https://doi.org/10.3727/152599518X15346132863175>
- Hartmann, S., Backmann, J., Newman, A., Brykman, K. M., and Pidduck, R. J. (2022). Psychological resilience of entrepreneurs: A review and agenda for future research. *Journal of Small Business Management*, 60(5), 1041–1079. <https://doi.org/10.1080/00472778.2021.2024216>
- Henriksen, D., Richardson, C., and Shack, K. (2020). Mindfulness and creativity: Implications for thinking and learning. *Thinking Skills and Creativity*, 37, 100689. <https://doi.org/10.1016/j.tsc.2020.100689>
- Jankowski, T., and Holas, P. (2014). Metacognitive model of mindfulness. *Consciousness and Cognition*, 28, 64–80. <https://doi.org/10.1016/j.concog.2014.06.005>
- Jiménez-Picón, N., Romero-Martín, M., Ponce-Blandón, J. A., Ramirez-Baena, L., Palomo-Lara, J. C., and Gómez-Salgado, J. (2021). The relationship between mindfulness and emotional intelligence as a protective factor for healthcare professionals: Systematic review. *International Journal of Environmental Research and Public Health*, 18(10), 5491. <https://doi.org/10.3390/ijerph18105491>
- Kabat-Zinn, J. (2023). *Wherever you go, there you are: Mindfulness meditation in everyday life*. Hachette UK.
- Klassen, R., and Usher, E. (2010). Self-efficacy in educational settings: Recent research and emerging directions. *Advances in Motivation and Achievement*, 16 Part A, 1–33. [https://doi.org/10.1108/S0749-7423\(2010\)000016A004](https://doi.org/10.1108/S0749-7423(2010)000016A004)
- Kohler, E. (2019). Sources of teachers' self-efficacy for technology integration from formal, informal, and independent professional learning. *Educational Technology Research and Development*, 68, 89–108. <https://doi.org/10.1007/s11423-019-09671-6>
- Kroon, B., van Woerkom, M., and Menting, C. (2017). Mindfulness as substitute for transformational leadership. *Journal of Managerial Psychology*, 32(4), 284–297. <https://www.emerald.com/insight/content/doi/10.1108/jmp-07-2016-0223/full/pdf>

- Li, S. (2023). The effect of teacher self-efficacy, teacher resilience, and emotion regulation on teacher burnout: a mediation model. *Frontiers in Psychology*, 14, 1185079. <https://doi.org/10.3389/fpsyg.2023.1185079>
- Lindsay, E. K., and Creswell, J. D. (2017). Mechanisms of mindfulness training: Monitor and Acceptance Theory (MAT). *Clinical Psychology Review*, 51, 48–59. <https://doi.org/10.1016/j.cpr.2016.10.011>
- Luo, X., Alias, B. S., and Adnan, N. H. (2024). Exploring the interplay between teacher leadership and self-efficacy: A systematic literature review (2013–2024). *Education Sciences*, 14(9), 990. <https://doi.org/10.3390/educsci14090990>
- Manchanda, P., Arora, N., Nazir, O., and Islam, J. U. (2023). Cultivating sustainability consciousness through mindfulness: An application of theory of mindful-consumption. *Journal of Retailing and Consumer Services*, 75, 103527. <https://doi.org/10.1016/j.jretconser.2023.103527>
- Mieres-Chacaltana, M., Salvo-Garrido, S., and Denegri, M. (2021). Prosocialness and happiness in Chilean student teachers. *Frontiers in Psychology*, 12, Article 745163. <https://doi.org/10.3389/fpsyg.2021.745163>
- Montani, F., Vandenberghe, C., Khedhaouria, A., and Courcy, F. (2020). Examining the inverted U-shaped relationship between workload and innovative work behaviour: The role of work engagement and mindfulness. *Human Relations*, 73(1), 59-93. <https://doi.org/10.1177/0018726718819055>
- Mubarak, Z. K., and Selimin, M. A. (2023). Significance of innovative learning skills in the era of education 4.0. *International Journal of Sustainable Construction Engineering and Technology*, 14(3), 339–352. <https://doi.org/10.30880/ijscet.2023.14.03.029>
- Müller, C., Mildenerger, T., and Steingruber, D. (2023). Learning effectiveness of a flexible learning study programmeme in a blended learning design: why are some courses more effective than others? *International Journal of Educational Technology in Higher Education*, 20(1), 10. <https://doi.org/10.1186/s41239-022-00379-x>
- Ng, T., and Lucianetti, L. (2015). Within-individual increases in innovative behaviour and creative, persuasion, and change self-efficacy over time: A social-cognitive theory perspective. *The Journal of Applied Psychology*, 101(1), 14–34. <https://doi.org/10.1037/apl0000029>
- Oh, V. K. S., Sarwar, A., and Pervez, N. (2022). The study of mindfulness as an intervening factor for enhanced psychological well-being in building the level of resilience. *Frontiers in Psychology*, 13, 1056834. <https://doi.org/10.3389/fpsyg.2022.1056834>
- Oranga, J., and Matere, A. (2023). Qualitative research: Essence, types and advantages. *Open Access Library Journal*, 10(12), 1–9. <https://doi.org/10.4236/oalib.1111001>
- Pradikto, S. (2024). Exploring the entrepreneurial spirit: Student perspectives on innovation, education, and career aspirations. *International Journal of Humanities Education and Social Sciences (IJHESS)*, 3(5), 2630–2640. <https://doi.org/10.55227/ijhess.v3i5.996>
- Purc, E., and Lagun, M. (2019). Personal values and innovative behaviour of employees. *Frontiers in Psychology*, 10(Apr), 1–16. <https://doi.org/10.3389/fpsyg.2019.00865>
- Ranihusna, D., Nugroho, A. S., Ridloah, S., Putri, V. W., and Wulansari, N. A. (2021). A model for enhancing innovative work behaviour. *IOP Conference Series: Earth and Environmental Science*, 747, 012039. <https://doi.org/10.1088/1755-1315/747/1/012039>

- Rattanawichai, N., Wiriyaipinit, M., and Khlaisang, J. (2023). The factors affecting innovative behaviour: An employee assessment system based on knowledge creation. *HighTech and Innovation Journal*, 4(1), 174–188. <https://doi.org/10.28991/HIJ-2023-04-01-012>
- Ratten, V., and Jones, P. (2020). Entrepreneurship and management education: Exploring trends and gaps. *The International Journal of Management Education*, 19(1), 100431. <https://doi.org/10.1016/j.ijme.2020.100431>
- Rubach, C., and Lazarides, R. (2021). Addressing 21st-century digital skills in schools-development and validation of an instrument to measure teachers' basic ICT competence beliefs. *Computers in Human Behaviour*, 118, 106636. <https://doi.org/10.1016/j.chb.2020.106636>
- Sarstedt, M., Hair, J. F., Nitzl, C., Ringle, C. M., and Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses! *International Journal of Market Research*, 62(3), 288–299. <https://doi.org/10.1177/1470785320915686>
- Saura, J., Palacios-Marqués, D., Correia, M., and Barbosa, B. (2023). Editorial: Innovative behaviour in entrepreneurship: Analyzing new perspectives and challenges. *Frontiers in Psychology*, 14, 1123236. <https://doi.org/10.3389/fpsyg.2023.1123236>
- Sawatzky, R. G., Ratner, P. A., Richardson, C. G., Washburn, C., Sudmant, W., and Mirwaldt, P. (2012). Stress and depression in students: The mediating role of stress management self-efficacy. *Nursing Research*, 61(1), 13–21. <https://doi.org/10.1097/NNR.0b013e31823b1440>
- Schallert, S., Lavicza, Z., and Vandervieren, E. (2022). Merging flipped classroom approaches with the 5E inquiry model: A design heuristic. *International Journal of Mathematical Education in Science and Technology*, 53(6), 1528–1545. <https://doi.org/10.1080/0020739X.2020.1831092>
- Scott, S. and Bruce, R. (1994). Determinants of innovative behaviour: A path model of individual innovation in the workplace. *Academy of Management Journal*, 1994, 37(1), 580–607. <https://doi.org/10.1049/iet-rsn:20080009>
- Squyres, E. (2023). *A mindfulness-based intervention for educators: Cultivating self-awareness and self-compassion to increase well-being and mitigate burnout*. [Master degree dissertation, Lesley University]. Digital Commons@Lesley. https://digitalcommons.lesley.edu/mindfulness_theses/74/
- Stumbrienė, D., Jevsikova, T., and Kontvainė, V. (2024). Key factors influencing teachers' motivation to transfer technology-enabled educational innovation. *Education and Information Technologies*, 29, 1697–1731. <https://doi.org/10.1007/s10639-023-11891-6>
- Suphasri, P., and Chinokul, S. (2021). Reflective practice in teacher education: Issues, challenges, and considerations. *Pasaa*, 62(December), 236–264. <https://doi.org/10.58837/chula.pasaa.62.1.9>
- Premalatha, T. and Subadevi, K. (2024). Equipping educators and students with 21st century skills: Strategies for success in a modern educational landscape. *Gyan Anveshika*, 1(1), 8–11. https://www.researchgate.net/publication/382495395_Equipping_Educators_and_Students_with_21st_Century_Skills_Strategies_for_Success_in_a_Modern_Educational_Landscape
- Thurlings, M., Evers, A. T., and Vermeulen, M. (2015). Toward a model of explaining teachers' innovative behaviour: A literature review. *Review of Educational Research*, 85(3), 430–471. <https://doi.org/10.3102/0034654314557949>
- van Rijnsoever, F. J., Sitzler, S., and Baggen, Y. (2023). The change agent teaching model: Educating entrepreneurial leaders to help solve grand societal challenges. *The International Journal of Management Education*, 21(3), 100893. <https://doi.org/10.1016/j.ijme.2023.100893>

- Varlik, S., Varlik, F., and Karakuş, M. (2024). Is creative thinking and innovation in teachers enough on their own? What happens if there is no entrepreneurship and reflective thinking? *Teaching and Teacher Education*, 152, 104800. <https://doi.org/10.1016/j.tate.2024.104800>
- Wang, W., Zhao, X., Zhang, X., Liu, Y., and Yuan, P. (2023). Entrepreneurs' role overload and empowering leadership: A reciprocal relationship based on conservation of resources. *Frontiers in Psychology*, 14, 1118099. <https://doi.org/10.3389/fpsyg.2023.1118099>
- Wang, X. (2023). Exploring positive teacher-student relationships: The synergy of teacher mindfulness and emotional intelligence. *Frontiers in Psychology*, 14, 1301786. <https://doi.org/10.3389/fpsyg.2023.1301786>
- Wei, J., Chen, Y., Zhang, Y., and Zhang, J. (2020). How does entrepreneurial self-efficacy influence innovation behaviour? Exploring the mechanism of job satisfaction and Zhongyong thinking. *Frontiers in Psychology*, 11, 708. <https://doi.org/10.3389/fpsyg.2020.00708>
- Xerri, M. J., and Brunetto, Y. (2010). Fostering innovative behaviour: The importance of employee commitment and organisational citizenship behaviour. *International Journal of Human Resource Management*, 24(16), 21–40. <https://doi.org/10.1080/09585192.2013.775033>
- Yada, A., Leskinen, M., Savolainen, H., and Schwab, S. (2022). Meta-analysis of the relationship between teachers' self-efficacy and attitudes toward inclusive education. *Teaching and Teacher Education*, 109, 103521. <https://doi.org/10.1016/j.tate.2021.103521>
- Zangri, R. M., Andreu, C. I., Nieto, I., González-Garzón, A. M., and Vázquez, C. (2022). Efficacy of mindfulness to regulate induced emotions in the laboratory: A systematic review and meta-analysis of self-report and biobehavioural measures. *Neuroscience & Biobehavioural Reviews*, 143, 104957. <https://doi.org/10.1016/j.neubiorev.2022.104957>
- Zhang, H., Ayub, A., and Iqbal, S. (2023). Creative self-efficacy – a double-edged sword: The moderating role of mindfulness between deliberate practice, creative self-efficacy, and innovation performance. *Business Process Management Journal*, 29(7), 2059–2080. <https://doi.org/10.1108/BPMJ-02-2023-0072>
- Zolkoski, S. M. and Lewis-Chiu, C. (2019). Alternative approaches: Implementing mindfulness practices in the classroom to improve challenging behaviours. *Beyond Behaviour*, 28(1), 46–54. <https://doi.org/10.1177/1074295619832943>



© 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).