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RECEIVED 10 September 2023

ACCEPTED 25 October 2023

PUBLISHED 07 November 2023

## CITATION

Karali N, Mastrokouskou S and Livas C (2023)  
Mindful minds and entrepreneurial spirits in  
higher education: a scoping review.  
*Front. Educ.* 8:1291845.  
doi: 10.3389/feduc.2023.1291845

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# Mindful minds and entrepreneurial spirits in higher education: a scoping review

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**Introduction:** Mindfulness at Higher Education Institutions (HEIs) may enhance personal development, learning, and entrepreneurial thinking. Thus, this scoping review investigates the effects of mindfulness on HEI entrepreneurship education, focusing on teaching, learning, and entrepreneurial intention.

**Method:** To identify relevant articles for inclusion, the study used a predetermined set of keywords and a descriptive search algorithm in six electronic databases. The process of study selection adhered to the principles outlined in the Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) statement and resulted in the inclusion of eleven (11) studies. Said studies spanned several nations and employed various research methods, with an emphasis on quantitative approaches.

**Results:** Results indicated that mindfulness did not have a direct impact on lecturers' commitment to teaching entrepreneurship. Nevertheless, mindfulness appeared to indirectly impact teaching outcomes by influencing other variables, such as readiness for change. From an educational processes and outcomes perspective, mindfulness was found to improve the entrepreneurship learning environment and enhance students' entrepreneurial orientation. The latter included students' intentions to develop or participate in environmental and socially responsible entrepreneurial ventures.

**Discussion:** The present study advances our understanding of the relationship between mindfulness, entrepreneurship teaching and students' entrepreneurial orientation in higher education settings. Nevertheless, it also demonstrates a lack of comprehension of the exact mechanisms at play, and therefore highlights the need for further research in this scientific area. By gaining a broader awareness of the impact of mindfulness on entrepreneurship education, education professionals and decision-makers can improve the design of programmes to cultivate the entrepreneurial orientation and skills necessary for students' success in a rapidly changing business environment.

**Systematic Review Registration:** The review process has been duly registered with the Open Science Framework (OSF) and given the identifier DOI [10.17605/OSF.IO/YJTA3](https://doi.org/10.17605/OSF.IO/YJTA3).

## KEYWORDS

higher education, mindfulness, learning process approaches, teacher effectiveness, entrepreneurial intention

## Introduction

The higher education (HE) landscape has undergone significant changes over the past few years, with increased recognition of an urgent need for improved learning and professional standards at international level. The growth in the number of entrepreneurship programmes (EPs) available to higher education institutions (HEIs) all over the world, along with growing awareness about the benefits of incorporating mindfulness into educational settings, has contributed to this shift. In order to give students the knowledge and skills required for entrepreneurship, but also well-being as a means of making progress in today's challenging world, this dual approach is reflected through an integrated educational scheme that includes both development of entrepreneurial competencies and cultivation of mindfulness.

Transitioning from the changes in the higher education landscape and the growing recognition of the importance of mindfulness, it is essential to delve into the reinforcement of effective training and measurement (Milenos et al., 2021; Mastrokoulou et al., 2022; Lin et al., 2023), as well as the emergence of entrepreneurship programmes designed to foster entrepreneurial mindsets and promote entrepreneurship as an appealing career path (Rideout and Gray, 2013). This has also led to the emergence of EPs that aim to foster an entrepreneurial mindset in students and promote entrepreneurship as an attractive career path (Liao et al., 2022). At the same time, the concept of mindfulness has gained prominence in academic discussions about education and has become a notable and integral part of this discourse (Sternberg, 1997, 2000). This shift is also underscored by the increasing prevalence of EPs that incorporate mindfulness practices in HEIs worldwide (e.g., Lepik and Urmanavičienė, 2022; Maritz et al., 2022; Mei and Symaco, 2022).

Although there is a growing convergence in the fields of mindfulness and entrepreneurship education, there is a lack of in-depth analysis of the connection between mindfulness and EPs in HEIs. This study aims to fill this gap by exploring the potential impact of mindfulness on faculty engagement and the learning environment, as well as its importance in fostering students' entrepreneurial intentions. It also seeks to understand how mindfulness, as posited by Langer (2014), equips individuals with a particular vantage point that enables them to observe and interact with their environment and emphasises the importance of a mindful teaching approach that prioritises the learning process (Weare, 2019). Furthermore, this study aims to build on recent scholarly research that has begun to illuminate the complex relationship between entrepreneurship education, mindfulness, and student intentions (e.g., Westhead and Solesvik, 2016; Pan et al., 2018; Jena, 2020). In this way, this research seeks to illuminate the complex mechanisms that unite these significant components and their interdependence. Ultimately, this interdisciplinary research aims to provide deeper insights into a complex web of entrepreneurial programmes and the concept of mindfulness at HE by providing meaningful information about the underlying mechanisms and outcomes.

To this end, the paper is organised as follows: In the next section, a complete review of the current literature is provided, explaining the main theoretical paradigms and empirical findings. This is followed by an explanation of the methodology and research approach. The next section presents the research findings, which are then discussed in detail in terms of their implications. Finally, a comprehensive conclusion is drawn that summarises the contribution of the work to understanding the complex relationship between mindfulness and entrepreneurship at HE.

## Defining 'mindfulness in educational settings'

In the dynamic fields of psychology and education, the concept of mindfulness has received considerable attention as a powerful catalyst for enhancing psychological well-being and promoting personal development (Rehman et al., 2023). Mindfulness involves the intentional development of a heightened state of awareness focused on the present moment (Brown and Ryan, 2003). This comprehensive state of consciousness encompasses multiple aspects, such as cognitive processes, affective experiences, somatic sensations, and the immediate environment (Kabat-Zinn, 2019). The abovementioned definitions indicate that although mindfulness is primarily perceived as a cognitive state, it extends to include emotional and somatic aspects of individuals.

The increasing importance of the concept has led it to expand beyond its original psychological framework and become a powerful tool for cultivating psychological resilience (Chin et al., 2019), successfully managing stress (Hathaisaard et al., 2022), and promoting inner peace (Ge et al., 2020). Consequently, the varying ways in which the concept of mindfulness has been defined have had substantial implications on the investigation of the effects of mindfulness on educational outcomes.

Mindfulness, particularly in the context of cognitive processes, is characterised by the presence of conscious self-awareness, which is closely linked to the practice of non-judgmental attention (Baer, 2003; Silveira et al., 2023). The ability to bring about significant change is evident in the transformative capacity of educational paradigms. Mindfulness, understood as a contemplative practice, emphasises the development of a heightened state of awareness that focuses on the present moment whilst fostering qualities such as acceptance, compassion, and a receptive mindset (Reangsing et al., 2023). Prominent researchers such as Kabat-Zinn (2003, 2005) and Brown and Ryan (2003) have provided empirical evidence of the effectiveness of mindfulness practices in education. Significantly, the impact of mindfulness extends beyond academia to a variety of fields including health care (Lomas et al., 2018) and law (Christopher et al., 2018). To be more specific, not only can mindfulness be used in education, but it also has positive effects that go beyond traditional boundaries. Empirical studies by Christopher et al. (2009) and Vujanovic et al. (2010) highlight the importance of mindfulness in improving mental well-being and addressing mental health issues. In addition, Ryan and Deci's (2001) research illuminates the ways in which mindfulness practices facilitate the development of constructive behaviours and self-control, leading to long-lasting good outcomes. Overall, a growing body of research provides consistent evidence about the positive impact of mindfulness on personal wellbeing across various contexts, including education. These consistent (positive) findings suggest that the multifaceted impact of mindfulness on individuals is genuine, generalizable and appropriate to operate as a basis for the development of theory and policy interventions.

Research shows that mindfulness helps improve student engagement and aligns them with their goals (Miralles-Armenteros et al., 2021). As previous studies have shown (McCloskey, 2015; Lin and Mai, 2018), mindfulness plays a preponderant role in the development of critical thinking skills and correlates positively with academic performance. Furthermore, mindfulness promotes a shift in perspective and supports academic engagement, as suggested by Langer and Moldoveanu (2000) and Shapiro et al. (2006). This shift in perspective leads to greater interest, attention, and engagement in

tasks, which ultimately leads to greater effort and participation in academic activities. In addition, mindfulness promotes compassion, connects individuals to one another, and increases their engagement in collaborative activities. In summary, mindfulness not only promotes critical thinking and academic performance, but also strengthens academic engagement through its influence on perspective taking, attention, and compassion. Notwithstanding the positive effects of mindfulness, existing literature has not explored the potential challenges associated with its applications in various sociocultural contexts. A thorough investigation of the probable cultural variations in the understanding and exercise of mindfulness in educational settings could provide a more comprehensive perspective on its impact on educational outcomes.

## Defining 'entrepreneurship education'

Globally, HEIs are increasingly focusing on entrepreneurship education, a dynamic field encompassing diverse pedagogical approaches (Volkman and Audretsch, 2017). This evolving discipline aims to foster students' entrepreneurial mindsets, abilities, and attitudes to effectively navigate the complexities of corporate innovation, management, and leadership.

Although there may be considerable differences in the precise outcomes of entrepreneurship in different socioeconomic or industrial contexts, entrepreneurship has been viewed as a catalyst for economic expansion (Li et al., 2020; Neneh, 2022), innovation and job creation (Belesis et al., 2021), and wealth development (Orhan and Scott, 2001; Carree et al., 2002; Stel et al., 2005). The proliferation of schools and institutions offering EPs has significantly increased (Katz, 2003; Solomon, 2007), as business educators acknowledge the teachability of entrepreneurship and recognise that rigorous education can cultivate an entrepreneurial mindset (Drucker, 1985; Gorman et al., 1997; Schultz, 2021).

The benefits of entrepreneurship education have garnered support from various researchers (Chrisman, 1997; Peterman and Kennedy, 2003; Dissanayake, 2013). Given that HEIs students are promising sources of entrepreneurship (Veciana et al., 2005), entrepreneurship education aims to produce marketable graduates and foster entrepreneurial thinking (Jones et al., 2017; Fischer et al., 2021). Some researchers define entrepreneurship education's goal as enhancing students' entrepreneurial support capabilities, positioning them for future leadership and innovation (Harms, 2015; Jones, 2019). A better understanding of financial concepts is another benefit of entrepreneurship education for students. Financial risk may be managed successfully, and financial mistakes might be avoided with a good understanding of financial principles (Wiqar et al., 2022). Consequently, entrepreneurship education is often anticipated to enhance students' creative thinking capacity, leadership skills, negotiation and innovation capabilities (Mcmullan and Long, 1987; Ronstadt et al., 1988; Yuan and Wu, 2020; Cui et al., 2021). Nevertheless, given that the effective development of entrepreneurial support capabilities may require the integration of formal entrepreneurship education, experiential learning, mentorship, and continuous self-improvement, different educational programmes may not be equally effective in fostering entrepreneurial skills amongst students.

Entrepreneurship education also accentuates entrepreneurship as a career path, emphasising networking abilities (Ronstadt, 1985). Additionally, it nurtures an entrepreneurial attitude and underscores

empathy as a critical element (Snipes, 2020). Whilst education can foster entrepreneurship, its effectiveness in creating entrepreneurs remains uncertain (Fretschner and Weber, 2013; Rideout and Gray, 2013). Although initiating or participating in entrepreneurial endeavours may be contingent upon numerous factors, individuals possessing high levels of entrepreneurial education, an entrepreneurial mindset, and creativity are more likely to start their own business venture (Hu and Ye, 2017; Handayati et al., 2020).

HEIs students frequently face decisions regarding their futures, which often involve pursuing further education or venturing into entrepreneurship. For students pursuing management degrees, entrepreneurial orientation significantly influences readiness to establish new ventures (Plana-Farran et al., 2022). The willingness to take calculated risks for success and learning, which is characterised as an entrepreneurial approach by Gorostiaga et al. (2019), plays a key role in shaping students' decision making. Amongst others, entrepreneurial orientation involves risk-taking, innovativeness, proactiveness, and the drive to identify opportunities (Plana-Farran et al., 2022; Belesis et al., 2023). Jiatong et al. (2021) suggest that individuals can enhance their social cognition through entrepreneurial education, consistently control their ideas, and engage in purposeful and coherent entrepreneurial actions.

The concept of commitment to teaching entrepreneurship, reflecting lecturers' dedication to enhancing students' entrepreneurial skills and academic achievements, is central to these analyses. Promoting lecturers' teaching commitment involves encouraging their continuous involvement and enhancing students' academic achievement (Tyree, 1996).

Whilst the effectiveness of entrepreneurship education gains recognition, experts emphasise the need for continual improvement of its quality, content, and delivery (Hosseininia et al., 2023). The changing educational landscape, defined by economic volatility, technological advancements, and shifting labour market demands, underscores the urgency of this necessity. To thrive in a rapidly evolving world, students require the foundational knowledge and experiences that entrepreneurship education aims to provide (Fischer et al., 2021).

Despite the increasing emphasis on entrepreneurship education, as evinced by the large number of contemporary conceptual and empirical studies, there is a need for additional research the effectiveness of particular educational strategies (e.g., pedagogical approaches or innovative technologies) considering the evolving educational environment. Furthermore, it remains unclear whether entrepreneurship education is equally or disproportionately beneficial to unprivileged demographic groups, and whether the current educational paradigm promotes inclusivity, diversity and social responsibility.

## Methods

This study delved beyond conventional perspectives to thoroughly examine how mindfulness, traditionally viewed as a conceptual and influential element, operates within HEIs.

Scoping reviews provide significant advantages since they furnish a full synthesis of existing information, irrespective of research quality. Scoping reviews are very advantageous in the context of investigating unexplored domains, pinpointing gaps in existing research, and elucidating core concepts (Arksey and O'Malley, 2005; Grant and

Booth, 2009; Peters et al., 2015; Khalil et al., 2016). In order to maintain methodological rigour, the scoping review adhered to the methodology put forward by Arksey and O'Malley (2005), which encompasses five key stages. The aforementioned stages encompassed several key components, namely the formulation of primary research inquiries, the identification of methodological approaches for selecting pertinent studies, the meticulous curation of studies to be incorporated, the organisation and retrieval of pertinent data, and ultimately, the amalgamation, synthesis, and presentation of the acquired findings. The review process has been duly registered with the Open Science Framework (OSF) and given the identifier DOI 10.17605/OSF.IO/YJTA3.

## Identifying research questions

The purpose of this review was to explore the effects of integrating mindfulness in entrepreneurship education on teacher effectiveness, learning process approaches, and students' entrepreneurial intention in HEIs, with the ultimate goal of contributing valuable insights to the existing body of literature on the potential benefits of mindfulness in promoting entrepreneurship and an entrepreneurial mindset amongst students. In particular, the research question that initially informed the review was as follows: 'How does the integration of mindfulness in entrepreneurship education impact teacher effectiveness, learning process approaches, and entrepreneurial intention in HEIs?'

This question was subdivided into the following questions:

*What are the impacts of incorporating mindfulness into entrepreneurship education on teaching effectiveness, including their capacity to promote creativity, innovation, proficient communication, and the development of entrepreneurial intention amongst students in HE environments?*

*How does integrating mindfulness into entrepreneurship education impact learning process approaches in HE classrooms, particularly in terms of fostering resilience, flexibility, and problem-solving skills?*

*To what extent does integrating mindfulness into entrepreneurship education enhances students' entrepreneurial intention, fosters their pursuit of entrepreneurial opportunities, and cultivates an entrepreneurial mindset?*

## Identifying relevant studies

The scoping review adhered to the methodology outlined by Arksey and O'Malley (2005), which included using a predetermined

set of keywords and identifying appropriate databases for inclusion. The focus of this research was specifically on international viewpoints. In order to accomplish this objective, a descriptive search algorithm was developed and is shown in Table 1.

The search methodology included the use of a blend of keywords and restricted vocabulary terms in order to identify articles that were pertinent to the research topic. The search criteria used in this study included the terms 'mindfulness\*', 'entrepreneurship education', and 'higher education institutions'. The search phrases were combined using the Boolean operators 'AND' and 'OR' in order to conduct a thorough and complete search. For example, in the database ERIC the following search term was used: ('mindfulness training' OR 'mindfulness practices' OR 'mindfulness intervention') AND ('higher education institutions' OR 'university' OR 'college') AND ('entrepreneurship education' OR 'entrepreneurial mindset' OR 'entrepreneurial characteristics' OR 'entrepreneurial practices').

The inclusion criteria for this review were predetermined and are listed in Table 2. These criteria were applied to potentially relevant studies during the review process. The studies included in the review met the following characteristics: (a) focused on mindfulness, (b) addressed learning and teaching processes and entrepreneurial intention on behalf of HE students, (c) included involved samples of higher education (HE) faculty and students, (d) empirical quantitative, qualitative, or mixed-methods research designs, (e) were written in English, (f) were published in peer-reviewed journals; and (g) were published as of 2013 to reflect advances in mindfulness-based entrepreneurship education research following the Entrepreneurship 2020 Action Plan (European Commission, 2013). Furthermore, it is important to note that the deliberate choice to include articles published between 2013 and 2023 in this scoping review was not arbitrary. Rather, it was motivated by the understanding that teaching is a dynamic and evolving practice that necessitates the examination of recent research in order to encompass ongoing developments and evaluations in the field.

Hence, specific exclusion criteria were applied to ensure relevance and focus of the review. Therefore, papers that did not clearly relate to mindfulness in entrepreneurship education in HEIs and were not written in English were deliberately omitted. Furthermore, a pivotal factor considered was the exclusion of papers that did not possess empirical basis, including research of a quantitative, qualitative, or mixed-method nature. The primary focus on empirical basis was intended to maintain the study's commitment to rigorous and well-supported research procedures.

The search was conducted in six electronic databases: ERIC, PsycINFO, Web of Science, Scopus, Education Research Complete, and Academic Search Complete. The search took place from January 2023 to June 2023.

TABLE 1 Sample of search terms for the ERIC database.

Step	Search terms
1.	To identify relevant research through title and full text in order to generate a wide range of responses: mindfulness*(training OR intervention OR program* AND learn* OR teach* AND entrepreneurship education OR course* OR lesson* AND third level OR college OR campus OR postsecondary OR University OR tertiary).
2.	entrepreneurial*(mindset* OR characteristics OR practices AND learn OR teach* OR instruction OR learning OR third level OR college OR campus OR postsecondary OR University OR tertiary).
3.	To identify relevant research through title and abstract in order to refine range of responses: impact (mindfulness training OR mindfulness intervention OR mindfulness program OR mindfulness practice OR mindfulness technique on entrepreneurship education AND learning process approaches OR creativity OR problem-solving abilities OR learning environment for students OR tertiary education OR third level OR college OR campus OR postsecondary OR University OR tertiary).



TABLE 2 Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Period	2013–2023	Studies outside these dates
Languages	English	Studies in other languages
Type of article	Original research, published in a peer-reviewed journal	Articles that are not peer-reviewed or original research
Study focus/population and sample	HE teachers and students	Pre-university-level schools' teachers and students
Literature focus	Articles that examined the impact of incorporating mindfulness practices or approaches into entrepreneurship education within HEIs, including empirical quantitative, qualitative, or mixed-methods studies.	Articles that do not pertain to mindfulness practices or approaches into entrepreneurship education in HE.
	In particular, articles that examined the impact on teaching effectiveness, learning processes, and the development of intention to start a business were considered.	Articles that lack empirical evidence, including quantitative, qualitative, or mixed-methods studies.

## Study selection

The process of evaluating the studies for potential inclusion in this research adhered to the principles outlined in the Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009; Page and Moher, 2017; Page et al., 2021), which were implemented to guarantee the appropriateness and methodological rigour of the selected studies.

The study selection procedure, accompanied with several particular steps, was carefully and systematically carried out. For the purpose of identifying studies which could be linked to a research theme, it was necessary to undertake an exhaustive search for appropriate databases and registers. Through this broad research strategy, which included all material likely to have an influence, a large range of literature has been identified.

As a result of the identification of possible studies, an extensive evaluation process has begun. Initially, validated inclusion criteria were the basis of the first screening mechanism used to determine whether a study was appropriate. Based on these criteria, the selected studies were in line with the overall research objectives.

In order to ensure that these criteria are harmonised with the initial definition of eligibility, detailed criteria have been developed for particular research questions and study objectives. These criteria ensure that the selected studies do not only comply with the General Inclusion Criteria, but also play an important role in answering research questions.

A key element of the eligibility assessment was an overall examination of each study's methodology rigour. Different methodological aspects, e.g., study design, data gathering methods and analysis techniques have been assessed in this evaluation. Potential exclusion from the study was applied to studies that did not comply with rigorous methodological standards.

Furthermore, these studies were considered to be compatible with those chosen research questions. Additional reviews have been carried out in cases that did not sufficiently contribute to answering the research questions.

A small number of studies meeting all necessary inclusion criteria have been selected following the completion of this detailed review process. There are high levels of relevance, science rigour and compliance with research objectives in the selected studies. The inclusion of studies which have achieved a high quality and relevance standard has resulted from this systematic and carefully chosen

selection process, ensuring that the scoping examination is as robust as possible.

In selecting these studies, consideration was given to the following variables:

- Date of publication: to ensure relevance to the current research context.
- Study design: The type of research design, whether experimental, observational, qualitative, or quantitative.
- Participants/Population: the characteristics of study participants, including their age, gender, educational level as well as related demographic data.
- Intervention or exposure: details of all interventions and exposures.
- Outcome measures: particular measure of results relevant in research questions.
- Methodology rigorousness: evaluation of the study's methodology in terms of sample size, data collection methods and statistical analysis.
- Educational setting: information on the educational context.
- Variables of interest: variable that is relevant to the study's objectives.
- Geographic location: the geographic location of the study for context and generalizability.
- Research focus: the key subject of a study.
- Source of publication: where the study was published.
- Language: The language that has been used to publish the study.

For each selected article, the full-text version was obtained, and the research team conducted an in-depth assessment to determine whether it was appropriate for inclusion in the study. In addition, a thorough review of the reference lists of the articles reviewed helped identify additional relevant literature that could contribute to the overall analysis.

413 titles were identified through the search on the selected databases. The search in registers revealed 12 studies. After removing duplicates ( $n = 167$ ), this initial search yielded more than 250 studies of which 119 studies were excluded for not matching the inclusion criteria. After screening the titles and abstracts of 139 studies, authors opted to additionally exclude 52 papers as being irrelevant. From an amount of 87 studies 59 were retrieved which in turn were assessed for eligibility. 48 articles were excluded because of not matching type

of article, population, or focus of the study. Finally, 11 studies met the inclusion criteria and were included in the scoping review (see Figure 1). The full texts of the remaining studies were then reviewed by all authors. This small number of articles and participants indicates the scarcity of research on this topic.

single reviewer, followed by a further examination conducted by two more researchers. Any inconsistencies in the evaluation were addressed via deliberation in order to guarantee the dependability of the results. The studies that have been chosen are indicated by an asterisk (\*) in the References section.

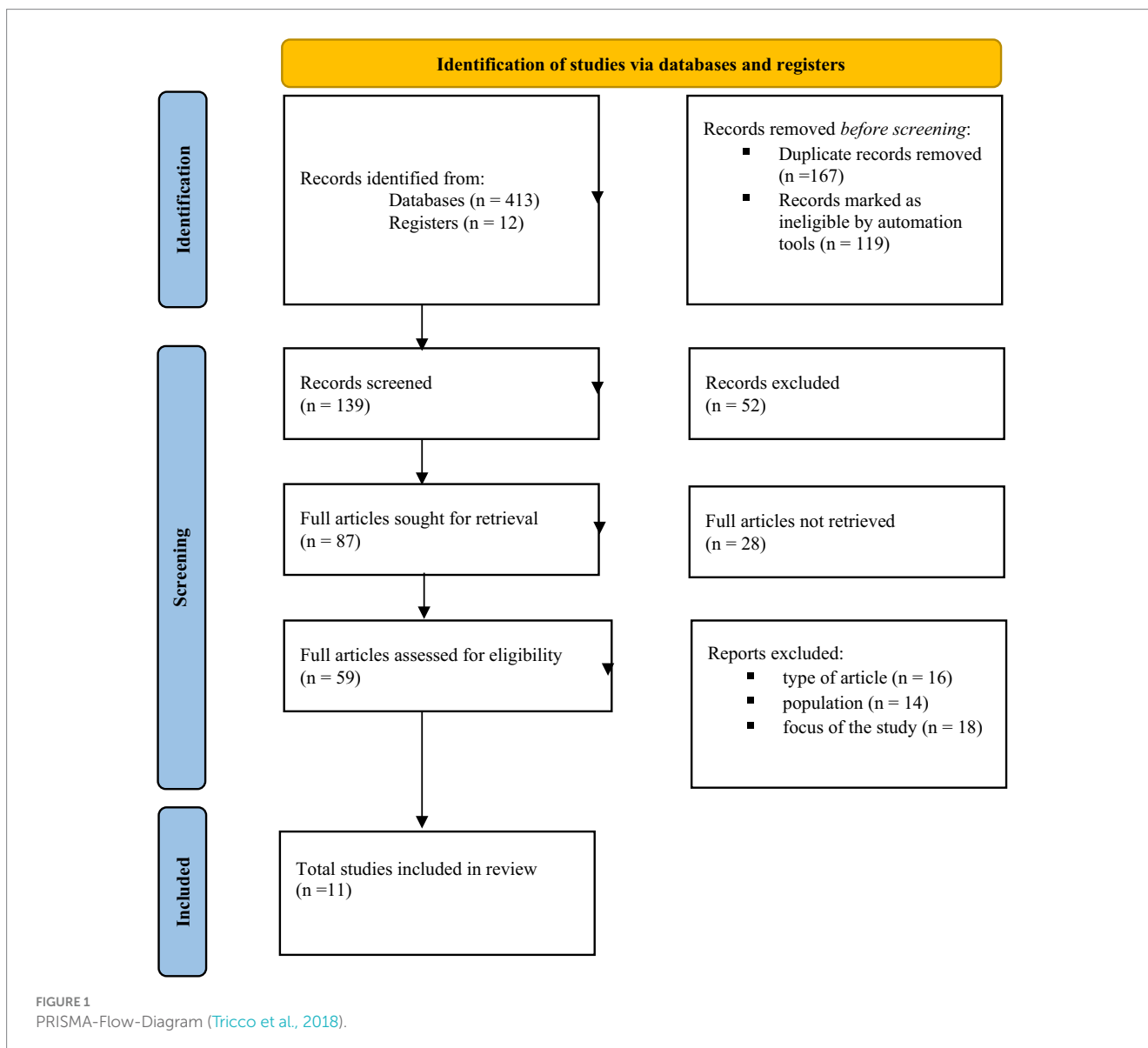
## Quality assessment

In order to analyse the quality of the studies, a checklist developed by the Critical Appraisal Skills Programme (CASP, 2018) was used. This checklist had 10 questions and was utilised to evaluate all the articles included in the analysis. The checklist was organised into three main sections: Section A, which focused on the validity of the research’s results; Section B, which examined the findings of the study; and Section C, which considered the potential local applicability of the results. The checklist serves as a teaching instrument for assessing the soundness, coherence, methodological rigour, presentation of findings, and research outcomes. Each publication was evaluated by a

## Results

### Data charting process

Data extraction was conducted using a standardised data extraction form. Data were extracted by the research team members in collaboration with two independent information search experts. Any discrepancies were resolved through discussion and consensus. The following information was extracted from each study: author and year, country where the study was conducted, research design, sample size, learning process, teaching process and entrepreneurial intention.



## General characteristics of included studies

The scoping review included studies from eight different countries. Figure 2 shows that most of the studies reviewed were conducted in Spain, Vietnam, and Malaysia (2 of 11 articles per country). One was conducted in each of Pakistan, Thailand, Iran, Turkey, and the United States. There is a notable dispersion of literature in terms of geographical distribution.

The collection of research presented in Table 3 shows a wide range of study designs, with a particular emphasis on quantitative ( $n=10$ ) and mixed methods ( $n=1$ ), as shown in Graph 1. The decision to use quantitative methods in most of the selected studies is evidence of a deliberate intent to collect empirical data. This approach allows for a thorough examination of the complex relationships between mindfulness and various outcomes in entrepreneurship education.

Arzubiaga et al. (2021) conducted a study in which face-to-face questionnaires were used to examine the relationship between mindfulness and certainty of future involvement in family businesses. The researchers used descriptive analysis, t-tests, and ANOVA as statistical methods to analyse the data. Similarly, the study by Cai et al. (2023) utilised a survey methodology involving in-person questionnaires. The researchers employed structural equation modelling to analyse the effects of mindfulness on intention to engage in green entrepreneurship. In addition, the study considered the mediating influence of intrinsic motivation for green entrepreneurship and the moderating role of spiritual intelligence. In their study, Chavaha et al. (2021) used a cross-sectional survey and partial least squares structural equation modelling (PLS-SEM) to examine the possible relationship between mindfulness and faculty engagement in teaching entrepreneurship. Hosseininia et al. (2023) used questionnaires and structural equation modelling to investigate the

positive correlation between exploratory behaviours, mindfulness, and entrepreneurial opportunity perception. Ozcan et al. (2023) performed research using a survey-based technique and employing structural equation modelling to investigate the impact of mindfulness on entrepreneurial objectives. Furthermore, the scholars investigated the mediating role of well-being in this association. Plana-Farran et al. (2022) conducted a study using structural equation modelling to investigate the influence of mindfulness on adaptability, open-minded thinking, and emotional intelligence. As evinced by Tuan et al. (2023) and Tuan and Pham (2022), quantitative methodologies have been extensively used to investigate the relationship between mindfulness and social entrepreneurial intention. These studies employed questionnaires and structural equation modelling for data collection and analysis, respectively. In their study, Yeap and Thien (2021) used an explanatory sequential mixed-methods design to examine the relationship between mindfulness and commitment to teaching entrepreneurship. They used questionnaires and qualitative interviews to collect data. Their findings suggest that the influence of mindfulness on engagement in teaching entrepreneurship is mediated by faculty willingness to change.

## Impacts on teacher effectiveness

Research has focused on how different elements affect teacher effectiveness. Studies have looked into the connection between lecturers' dedication to passing on certain expertise, like entrepreneurship, and the impact of other factors, including mindfulness.

In Thailand, Chavaha et al. (2021) investigated the intricate relationships between leadership style, lecturers' dedication to the

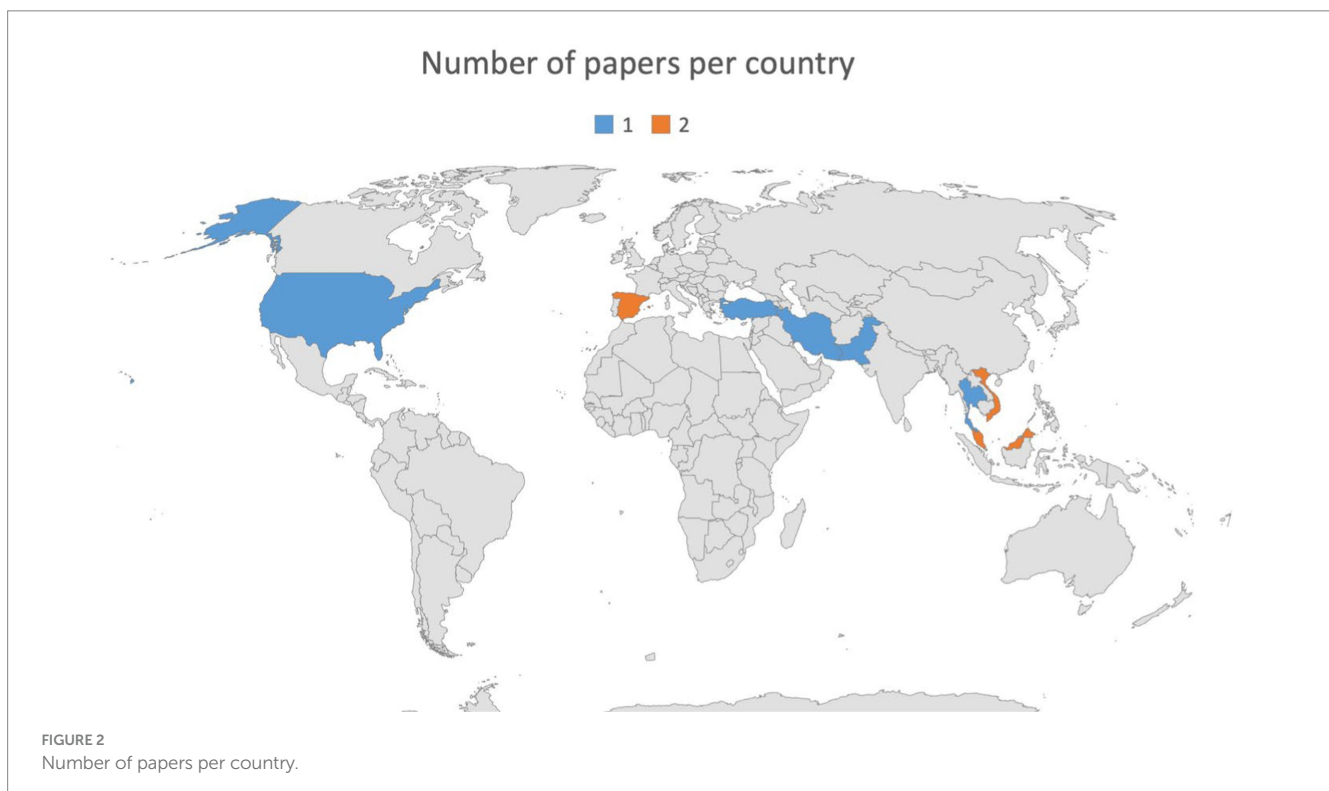


TABLE 3 Included studies from 2010 (in alphabetical order).

S. no	Author and year	Country	Research design	Sample size	Results		
					Learning process	Teaching process	Entrepreneurial intention
1	<a href="#">Arzubiaga et al. (2021)</a>	Spain	Survey with face-to-face questionnaire during lectures. Descriptive analysis, <i>t</i> -test, and ANOVA.	The target group consisted of a total of 204 students who were currently enrolled in degree programmes in Business Administration, as well as Business Administration and Law, at the University of Lleida. A total of 11 participants were removed from the research due to either nonresponsiveness or incomplete responses on the questionnaire, which encompassed demographic inquiries along with the MAAS (Mindful Attention Awareness Scale). Therefore, the ultimate sample size was 193 students.			<ul style="list-style-type: none"> <li>There is a positive correlation between the degree of mindfulness and the security and motivation shown by the young members of a family business with regard to their future prospects in that business.</li> </ul>
2.	<a href="#">Cai et al. (2023)</a>	Pakistan	Survey with face-to-face questionnaire. Non-probability sampling method. Data were collected in three waves (time-lagged research design) to negate the limitations of cross-sectional designs. Hypotheses were tested using structural equation modelling (SmartPLS).	395 responses from students in their final years. The target respondents are graduating students studying entrepreneurship, economics, management and economic science.			<ul style="list-style-type: none"> <li>Green mindfulness positively affects green entrepreneurial intention through green intrinsic motivation. This positive relationship is stronger for students with higher levels spiritual intelligence.</li> </ul>
3.	<a href="#">Chavaha et al. (2021)</a>	Thailand	This study used a cross-sectional survey design. The data was analysed using the Partial Least Squares-Structural Equation Modelling (PLS-SEM) approach.	The participants were academics who teach entrepreneurship or disciplines related to the factors of entrepreneurial abilities, and there was a total of 329 lecturers from the 8 polytechnics in Thailand. Only 169 of the 329 questionnaires have been completed and are being included in the study.		<ul style="list-style-type: none"> <li>The impact of mindfulness on lecturers' commitment to teaching entrepreneurship (CTE) is not statistically significant.</li> </ul>	

(Continued)



TABLE 3 (Continued)

S. no	Author and year	Country	Research design	Sample size	Results		
					Learning process	Teaching process	Entrepreneurial intention
4.	<a href="#">Hosseinia et al. (2023)</a>	Iran	Survey questionnaire. Hypotheses were tested using structural equation modelling.	200 agriculture students accessed with simple random sampling.			<ul style="list-style-type: none"> <li>■ Exploratory behaviours positively affect mindfulness, which in turn, positively affects entrepreneurial opportunity recognition.</li> </ul>
5.	<a href="#">Ozcan et al. (2023)</a>	Turkey	A survey was conducted to collect data during three different time periods during the spring semester of 2019. During the first and subsequent time periods, participants completed an electronic questionnaire that included questions about their demographic characteristics, mindfulness, entrepreneurship, and well-being. Conversely, during the third time interval, researchers accessed students' grade point average (GPA) through a computerised college information system. Hypotheses were examined using structural equation modelling.	134 students from five different departments of Istanbul Medeniyet University in Turkey.			<ul style="list-style-type: none"> <li>■ Mindfulness positively affects entrepreneurial intentions directly and indirectly, through thriving.</li> </ul>

(Continued)

TABLE 3 (Continued)

S. no	Author and year	Country	Research design	Sample size	Results		
					Learning process	Teaching process	Entrepreneurial intention
6.	<a href="#">Plana-Farran et al. (2022)</a>	Spain	A questionnaire was created <i>ad hoc</i> for this study	A total of 204 undergraduate students who were enrolled in the Business Administration and Business Administration and Law programmes at the University of Lleida (UdL). The sample size for the study included a total of 193 students. The investigation used structural equation modelling as a methodology to examine and evaluate the proposed ideas.	<ul style="list-style-type: none"> <li>■ Mindfulness has the potential to enhance flexibility, open thinking, emotional intelligence, learning ability, education, and opportunities for self-reliance. Consequently, it can serve as a protective factor for those who are uncertain about their opportunities for self-reliance.</li> <li>■ Mindfulness has the potential to positively impact students' emotional engagement by reducing the anxiety specifically associated with business students. The findings are consistent with existing evidence of the effectiveness of mindfulness in focusing attention on the present, thereby reducing preoccupation with past events, future worries, and the formation of anxious expectations. The importance of emotion control and mindfulness highlights the benefits of incorporating mindfulness practices with business administration students.</li> </ul>		<ul style="list-style-type: none"> <li>■ Mindfulness had no association with future job concerns and a weak negative association with uncertainty about becoming self-employed.</li> <li>■ There was a small negative association between mindfulness and future professional and personal worries and greater doubts about becoming self-employed at some point. This suggests that in the group of students who were uncertain about starting their own business, higher levels of mindfulness indicate lower levels of future worry. Thus, mindfulness may be useful in helping business students control their emotions.</li> </ul>

(Continued)

TABLE 3 (Continued)

S. no	Author and year	Country	Research design	Sample size	Results		
					Learning process	Teaching process	Entrepreneurial intention
7.	<a href="#">Snipes (2020)</a>	United States	Pre-test and post-test questionnaire to assess the impact of mindfulness activities in the classroom regarding empathy (quasi-experimental design).	72 students amongst four undergraduate entrepreneurship and two marketing courses within one college (Convenience sampling).	<ul style="list-style-type: none"> <li>The main conclusions of this study focused on the efficiency of quick but deliberate mindfulness exercises in dramatically raising empathy in undergraduate entrepreneurship and marketing students.</li> </ul>		
8.	<a href="#">Tuan et al. (2023)</a>	Vietnam	Survey with use of questionnaires. Cross sectional. Data in this study were processed using SEM	400 students, at all academic levels (bachelor, Master's, and PhD) studying economics-related majors at universities with head campus in Ho Chi Minn City. Only 294 valid questionnaires were accepted for data analysis. (Convenience sampling)			<ul style="list-style-type: none"> <li>The findings indicated that mindfulness influenced perceived controllability and self-efficacy likewise SEI (social entrepreneurial intention).</li> </ul>
9.	<a href="#">Tuan and Pham (2022)</a>	Vietnam	Collected data using an electronic survey method delivered through Google Forms. Applied SPSS and AMOS 24 software to analyse the collected data. The research hypotheses were verified by structural equation modelling (SEM)	This research involved surveying a sample of 525 students enrolled in social entrepreneurship courses offered by non-profit organisations in Vietnam.			<ul style="list-style-type: none"> <li>There is a positive correlation between mindfulness and the intention to engage in social entrepreneurship.</li> </ul>
10.	<a href="#">Yeap et al. (2021)</a>	Malaysia	Cross-sectional survey design with questionnaire (hand delivery). For data analysis in this work, Smart PLS Version 3.2.8 and partial least squares-structural equation modelling (PLS-SEM) were used.	In the Northern region of Malaysia, a comprehensive count of 171 educators were actively involved in delivering instruction on entrepreneurship or courses including entrepreneurial competencies across seven polytechnic institutions.		<ul style="list-style-type: none"> <li>Mindfulness does not affect (directly or indirectly through readiness for change) their commitment to teaching entrepreneurship.</li> </ul>	

(Continued)

TABLE 3 (Continued)

S. no	Author and year	Country	Research design	Sample size	Results	
					Learning process	Teaching process
11.	Yeap and Thien (2021)	Malaysia	Explanatory sequential mixed-methods design (survey questionnaire and qualitative interviews). Partial Least Squares Structural Equation Modelling to analyse the quantitative data, followed by nine semi structured interviews which were then thematically analysed.	A total of 171 lecturers are involved in teaching entrepreneurship courses or topics that involve entrepreneurial skills. Additionally, a qualitative research methodology was used consisting of nine interviews with lecturers who had expertise in this area.	<ul style="list-style-type: none"> <li>■ Mindfulness did not directly affect engagement in teaching entrepreneurship. The relationship between mindfulness and faculty commitment to teaching entrepreneurship was found to be mediated by their willingness to change.</li> </ul>	Entrepreneurial intention

topic of entrepreneurship education, and mindfulness. Contrary to predictions, their research revealed that mindfulness had no effect on lecturers' commitment to entrepreneurship education.

Yeap et al. (2021) looked into lecturers' dedication to sharing knowledge on entrepreneurship in Malaysia. They found no evidence that lecturers' commitment to teaching entrepreneurship was in any way related to transformational leadership or mindfulness. Additionally, the capacity for change was not a mediator of the link between mindfulness and a commitment to teaching entrepreneurship. These findings demonstrated that lecturers' dedication to teaching entrepreneurship was not significantly impacted by mindfulness.

A subsequent study, also conducted in Malaysia by Yeap and Thien (2021), showed that teachers' commitment to entrepreneurship education is not significantly influenced by their level of mindfulness. However, in this study the authors found that readiness for change acted as a mediator in the relationship between mindfulness and commitment. As a result, even if mindfulness might not have a direct impact on commitment, it can still be seen in action through its connection to readiness for change.

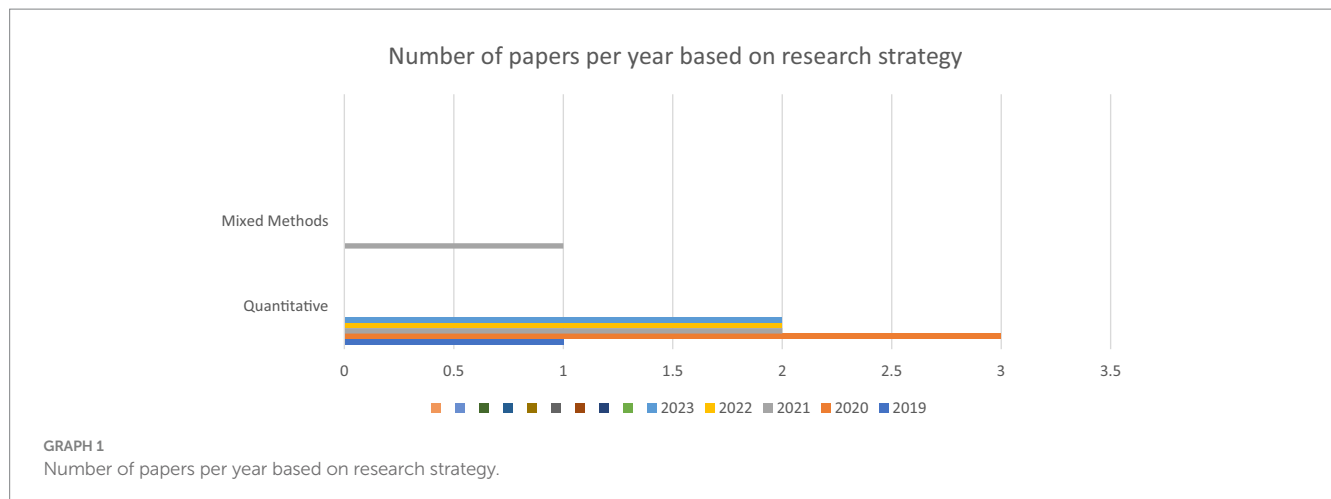
Overall, it can be argued that dedication to teaching entrepreneurship does not seem to be directly impacted by the level of lecturers' mindfulness. However, the link between mindfulness and commitment appears to be mediated by lecturers' readiness to change, suggesting that mindfulness may indirectly affect how well they support innovation, creativity, and effective communication amongst students in higher education settings. In the context of entrepreneurship education, these findings illustrate the intricate interactions between mindfulness, flexibility, and teacher effectiveness.

### Effects on learning process approaches

Two insightful research studies have shed light on the potential impact of mindfulness within the realm of education and business administration. These studies delve into the effects of integrating mindfulness into educational contexts, uncovering valuable insights that could shape learning processes and career prospects.

Snipes (2020) carried out a study in the United States that focused on the incorporation of mindfulness in entrepreneurship education in the context of learning process methodologies. The research demonstrated a significant rise in empathy amongst undergraduate students studying marketing and entrepreneurship after introducing brief but focused mindfulness interventions. Thus, the study's main findings focused on how these mindfulness practices can create empathy, which improves the learning environment for students seeking entrepreneurship education.

Plana-Farran et al. (2022) looked into how mindfulness affected Spanish business students' employment prospects. Several important issues were brought to light by the survey's results. First, mindfulness was demonstrated to increase opportunities for flexibility, open-mindedness, emotional intelligence, learning, and education. As a result, individuals who were uncertain about their ability to work for themselves could find mindfulness to be a helpful tool. Additionally, mindfulness was shown to improve students' emotional attachment and lessen worries related to business courses. Particularly in terms of emotional regulation and general well-being, the study underlined the advantages of cultivating mindfulness into the curriculum of business management programmes.



Overall, both studies demonstrate that mindfulness can influence numerous facets of education favourably. They also show how crucial and relevant mindfulness is in learning environments, particularly in entrepreneurship and business administration.

## Effects on entrepreneurial intention

The complex relationship between mindfulness and entrepreneurial intention has recently been the subject of a growing corpus of studies. This discourse aims to synthesise the results of numerous research efforts carried out in diverse geographic locations, each offering a distinct perspective on the function of mindfulness in influencing students' predisposition towards entrepreneurship.

To assess the effectiveness of the flourishing scale in an academic setting, students were involved in a survey conducted by [Ozcan et al. \(2023\)](#) in Turkey. Their research revealed that mindfulness had two different effects on intentions to start a business. Not only did mindfulness have a direct influence on entrepreneurial goals, but it also took on the function of a mediator, operating through the medium of thriving. According to the preceding interrelationships, the development of mindfulness may be used to encourage desire for entrepreneurship.

In Spain, [Arzubiaga et al. \(2021\)](#) examined the relationship between mindfulness and family business members who are part of the next generation. Whilst there were no appreciable differences between family business students and non-family business students in terms of mindfulness, higher mindfulness levels within the family business context were associated with greater certainty and motivation regarding future involvement in the family business. This suggests that developing a sense of purpose and dedication in the next generation of family company owners may be greatly aided by practising mindfulness.

Also in Spain, [Plana-Farran et al. \(2022\)](#) shifted the focus to undergraduate students' worries about their personal and professional futures. Unexpectedly, their research showed that mindfulness had little effect on these worries, regardless of a person's family business connections or educational goals. A small but significant negative connection between mindfulness and worries about starting one's own business emerged, nevertheless. This intriguing result provides a window into how mindfulness could support emotional regulation

and adaptive reactions, shedding light on its potential to raise emotional intelligence and support self-employment success. As a result, mindfulness might be seen as a useful tool in the field of business education, giving aspiring business owners the skills they need to properly control their anxiety.

[Tuan and Pham \(2022\)](#) investigated the relationship between mindfulness, perceived social support, and social entrepreneurship purpose in Vietnam. Their investigation revealed a positive relationship between mindfulness, perceived social support, and a propensity for social entrepreneurship. Notably, amongst these elements, mindfulness stood out as the most significant contributor to social entrepreneurial intention, emphasising its potential to foster a mentality focused on social impact.

[Tuan et al. \(2023\)](#) further explored the connection between mindfulness and social entrepreneurial goals within the Vietnamese environment. Their study revealed a dual effect: mindfulness had a direct and indirect effect, through self-efficacy, on social entrepreneurial orientation. This emphasises the role of mindfulness as a motivator for fostering a holistic entrepreneurial orientation rooted in a larger social context and driven by personal efficacy.

A study on the interaction between exploratory behaviours and the identification of entrepreneurial possibilities was conducted by [Hosseiniinia et al. \(2023\)](#) in Iran. Their thorough research revealed an enthralling link: exploratory behaviours were discovered to exert a positive influence on mindfulness and strategic learning, ultimately leading to increased entrepreneurial opportunity recognition. This demonstrates how consciously practising mindfulness can improve a person's aptitude for spotting and seizing opportunities within the entrepreneurial landscape.

[Cai et al. \(2023\)](#) set out to investigate the complex interplay of spiritual intelligence and environmental mindfulness within the setting of Pakistani university students' green entrepreneurship intention-behaviour relationship. In particular, in the area of green intrinsic motivation, their findings highlighted a strong connection between green mindfulness and green entrepreneurial purpose. Additionally, the study brought attention to an unusual interaction: students with greater degrees of spiritual intelligence benefited more from green mindfulness. This highlights the connection between mindfulness and spiritual intelligence, illuminating the power of their combined influence on the development of ecologically responsible entrepreneurial endeavours.



Collectively, these studies provide a comprehensive picture of the complex interactions between students' entrepreneurial intention and mindfulness. Mindfulness appears as a dynamic force capable of influencing entrepreneurial objectives in a variety of circumstances: from increasing opportunity detection and emotional intelligence to igniting social entrepreneurship and aligning with ecological initiatives. The use of mindfulness to build entrepreneurial prowess is poised to change the entrepreneurial environment and usher in a new era of purpose-driven and socially conscious commercial initiatives as studies continue to untangle its complexity.

## Discussion

The relationship between lecturers' dedication to teaching entrepreneurship in HEIs and level of mindfulness is complex (Yener et al., 2018; Liu et al., 2022). Although mindfulness may be beneficial to individuals' personal and professional lives, as has already been demonstrated in its potential for enhancing teachers' skills and performances, especially at low level of education like elementary or secondary school (Hwang et al., 2017), it may not have a substantial impact on their commitment to teaching entrepreneurship due to several reasons (Chavaha et al., 2021; Yeap et al., 2021). For instance, commitment and ability to teaching entrepreneurship may be more dependent on the lecturers' domain knowledge and pedagogical skills, as well as on several intrinsic factors, such as lecturers' passion for the subject being taught, teaching philosophy and pedagogy, job satisfaction, and desire to convey knowledge to students. Other contextual factors may include institutional support and expectations. Although there may not be a direct correlation between mindfulness and teachers' commitment to entrepreneurship education, there is indication that readiness for change acts as a mediator in that relationship (Yeap and Thien, 2021). Overall, although mindfulness is likely to improve the lecturers' personal wellbeing and performance in multiple ways, such as fostering positive and focused classroom environments, improving job satisfaction, and reducing burnout, it may not be amongst the primary determinants of commitment to teaching entrepreneurship. In any case, the scarce empirical evidence pertaining to the association between mindfulness and commitment in teaching entrepreneurship are indicative of a limited understanding of the exact mechanisms at work.

With regard to learning processes, mindfulness appears to have a positive influence in terms of promoting a more focused and effective approach to acquiring new entrepreneurial knowledge and skills (Snipes, 2020; Plana-Farran et al., 2022). This beneficial impact may be attributable to students' improved focus, emotional regulation, knowledge retention, problem-solving, critical thinking, perseverance, and study-habits. Mindful students are also likely to experience reduced stress and increased self-awareness, which in turn, positively affect their learning experiences.

Regarding the impact of mindfulness on students' entrepreneurial orientation, the former appears as an important factor for improving opportunity detection (Hosseini et al., 2023), entrepreneurial goals (Ozcan et al., 2023), emotional intelligence (Plana-Farran et al., 2022), motivation (Arzubiaga et al., 2021), green entrepreneurship intention (Cai et al., 2023) and willingness to engage with social entrepreneurship (Tuan and Pham, 2022; Tuan et al., 2023). According to Yahaya et al.

(2022) an individual's entrepreneurial orientation relies around their entrepreneurial intention. As a result, before engaging in entrepreneurial action or behaviour, one must have entrepreneurial intention (Ahmad et al., 2023). Although the exact mechanism through which mindfulness affects entrepreneurial intentions amongst students is likely to vary amongst individuals, results of the scoping review suggest that students with higher mindfulness levels are more likely to develop a stronger entrepreneurial orientation. Mindfulness allows students to develop mental agility, creative thinking, resistance to fear of failure, awareness of social and environmental issues, empathy, self-awareness, decision-making skills, networking skills, and resilience. All of the above are crucial for entrepreneurs to identify missed opportunities, consider creative solutions to business problems, take calculated risks, align entrepreneurial ventures with social and environmental causes, establish valuable connections, and commit to ventures.

Notwithstanding the importance of different teaching and assessment methods in student outcomes (Livas and Karali, 2022), mindfulness appears to positively affect the conditions of the learning environment, as part of a broader entrepreneurship education and development process. Akhtar et al. (2022) posit that the entrepreneurial intention of students is greatly influenced by their entrepreneurial education (EE). Merging mindfulness with the provision of relevant business knowledge, skills, and effective teaching in higher education settings can maximise its effectiveness in fostering entrepreneurial orientation amongst students and a commitment to produce positive business, social and environmental impact.

Overall, this paper contributes to existing literature by illuminating aspects of the role of mindfulness in entrepreneurship education, particularly in terms of mindfulness' impact on lectures and students. Although mindfulness can enhance teaching effectiveness, it appears to have a more complex (e.g., indirect) relationship with entrepreneurship teaching commitment. Apart from highlighting the multifaceted nature of commitment in educational settings, the research underscores the positive influence of mindfulness on students' entrepreneurial learning and orientation. In addition to the contribution of mindfulness to students' entrepreneurial development, the study concludes that the integration of mindfulness in entrepreneurship education can ultimately produce a positive societal impact.

## Limitations

Several limitations should be considered when interpreting the findings of the studies included in this review. First, the limited number of 11 studies analysed in this review has inherently limited the depth and breadth of insights that can be drawn from the existing literature. Then, the scope of this study may have been limited by the availability and quality of research on this topic, as is common with scoping reviews (Arksey and O'Malley, 2005). The limitation to English-language studies published in peer-reviewed journals may have resulted in the omission of unpublished or non-English-language research. The impact of cultural settings and educational environment on treatments and outcome definitions may differ across languages, providing important insights. In addition, it is important to note that grey literature that may be relevant to the topic was not included in

this study because the scope was limited to peer-reviewed publications only.

Another important limitation is the limited availability of research specifically addressing the incorporation of mindfulness into entrepreneurship education, which may result in an inadequate portrayal of the breadth and depth of this topic. Despite the application of rigorous selection criteria, the possibility of bias in study selection exists due to the complexity of terminology related to mindfulness, entrepreneurship education, and HEIs.

Two interconnected constraints are preventing the study from having a broad applicability of its findings: restricted geographical scope of selected studies as well as an important focus on HEIs. In a limited number of countries, the majority of research was carried out, which made it difficult for global perspectives to be diversified. The limited geographical distribution hinders the generalizability of these findings, in particular as they attempt to incorporate them into different culture and education contexts across countries where research has been carried out. Due to the limited geographical coverage of select studies, it is therefore important to take these findings into account when grouping them with other locations.

In addition, the limited scope of the study, which focused primarily on HEIs, may limit the generalizability of the findings to other educational contexts, including vocational institutions, non-formal education programmes, and corporate training environments.

In addition, it should be noted that the study highlights a limitation inherent in the existing body of research, namely the lack of some longitudinal studies. The aforementioned limitation impedes the ability to identify temporal patterns and establish causal relationships, potentially complicating the understanding of the development of mindfulness integration over time.

Finally, the use of electronic databases may have precluded finding articles that did not overtly include key search terms in the title, abstract, or keywords.

## Conclusions and future directions

In conclusion, this scoping review applied a rigorous methodology to find and evaluate relevant publications on incorporating mindfulness into entrepreneurship education in HEIs.

To ensure the validity and reliability of the included research, the study used predetermined criteria, databases, and quality assessment procedures.

This paper has focused on the role of mindfulness in entrepreneurship education. According to the results of the study, mindfulness can have a positive impact on different areas of the learning process, although the relationship between lecturers' mindfulness and their engagement in entrepreneurship education is still unclear. Students' emotional control, concentration, and overall learning experience appear to be enhanced by mindfulness. Clear evidence was found demonstrating that mindfulness significantly influences students' entrepreneurial intentions by improving their ability to identify opportunities, demonstrate emotional intelligence, and engage in social entrepreneurship. Thus by increasing the understanding of mindfulness's role in

entrepreneurship education particularly its impact on lecturers/teaching staff and students, this report has made a significant contribution to current literature.

In summary, the study proposes that mindfulness has the potential to be an effective tool for strengthening entrepreneurship education in HEIs. Future studies should focus on addressing the drawbacks identified in this study, examining the long-term impact of mindfulness techniques, and testing their influence in different cultural and educational contexts. The results of the scoping review also indicate that there is a need for additional empirical research examining the impact of mindfulness on entrepreneurship teaching and learning. Such studies may extend beyond measuring existing mindfulness levels of lecturers/teaching staff and students, and focus on the impact of specific mindfulness interventions in educational settings.

In this manner, the expansion of knowledge regarding how mindfulness might support the growth of entrepreneurial skills and intentions, ultimately fostering innovation, creativity, and socially responsible entrepreneurship at HEIs becomes evident.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Author contributions

NK: Conceptualization, Investigation, Writing – original draft, Writing – review & editing. SM: Conceptualization, Data curation, Investigation, Methodology, Software, Writing – original draft, Writing – review & editing. CL: Conceptualization, Investigation, Software, Writing – original draft, Writing – review & editing.

## Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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