Article

Does Mindfulness Influence Academic Performance? The Role of Resilience in Education for Sustainable Development

Lidia Vidal-Meliá *[ID], Marta Estrada [ID], Diego Monferrer [ID] and Alma Rodríguez-Sánchez [ID]

Department of Business Administration and Marketing, Universitat Jaume I, 12071 Castelló de la Plana, Spain; estrada@uji.es (M.E.); dmonferr@uji.es (D.M.); alrodrig@uji.es (A.R.-S.)
* Correspondence: lvidal@uji.es

Abstract: A mindful person is prone to be open to novelty, attentive to distinctions, sensitive to context, aware of multiple perspectives, and focused on the present. Therefore, the role of mindfulness in educational contexts is gaining ground given the great possibilities it offers in developing students' competences in education for sustainable development (ESD). The main goal of this study is to explore how mindfulness plays a key role in the learning process in response to the need to develop students' emotional competencies in ESD, and specifically how mindfulness has an impact on academic performance through resilience. We tested the research model with a questionnaire addressed to 497 students from three higher education institutions and one secondary school. The results of a structural equation analysis confirm the study hypotheses. We find mindfulness is positively related to resilience, which leads to better academic performance. Thus, being mindful is a key competence in ESD since it allows young people to face their education with the highest possibilities of training, experience, and personal growth. This exploratory study offers further evidence of the need to invest in mindfulness to foster resilience and academic performance and represents a first step for designing additional interventions on this line.

Keywords: education for sustainable development; mindfulness; resilience; academic performance

1. Introduction

Education for sustainable development (ESD) aims at developing competences that empower individuals to reflect on their actions, considering their current and future social, cultural, economic, and environmental impacts from a local and a global perspective [1]. Thus, it seems that in the last decade, fruitful research on integrating different competences for ESD became more evident (e.g., [2,3]). In this sense, competences for sustainable development (CSD) depart from a comprehensive and holistic view; CSD may be considered as a set of knowledge, skills, values, and attitudes necessary to ensure today's students and future leaders are ready to deal with complex issues regarding sustainability [4]. Several authors report on these competences, using different settings and models (e.g., [5]). In this sense, ref. [4] offers a complete and integrated view from various authors, including six main blocks of competences with similar characteristics: responsibility (values, ethics, reflection), emotional intelligence (transcultural understanding, empathy, solidarity, compassion), system orientation (interdisciplinary), future orientation, personal involvement (self-motivation, motivating others, learning), and the ability to take action (participatory skills) [4].

Further studies [6] also focus on the teaching strategies that foster competences or skills needed in search of sustainability in education, such as being critical, creative, being aware of problems, problem-solving skills, or cooperation, among others. Therefore, mindfulness, defined as the capacity of a person to focus attention on events, experiences, and states of the present moment, both external and internal [7], plays a pivotal role as a comprehensive competence in ESD. In other words, awareness generated in mindfulness is related to

emotional competences such as emotional intelligence (including the capacity to be aware of the own emotions and being conscious about others' feelings or feeling empathy). However, mindfulness is also related to how individuals perceive the world that surrounds them, including the resources that they have at hand, which is linked to academic competences. In fact, refs. [8,9] affirmed that mindfulness generates a higher intellectual capability and an openness to different thinking styles. In this vein, mindfulness might be related to ESD since it fosters CSD as emotional regulation, self-awareness, and future orientation [10–12]. Thus, the main goal of this study is to explore how mindfulness plays a key role in the learning process in response to the need to develop students' emotional competencies in ESD, and specifically how mindfulness has an impact on academic performance.

Mindfulness emerges as one of the most effective instruments for promoting awareness, cultivating the ability to be attentive, and increasing subjective wellbeing [13]. Thus, the authors [14,15] understand mindfulness as a "technology of the self" that exerts an action on the own subjectivity with the potential to cause effective changes in modes of existence in a more sustainable direction. Quantitative research [16] has shown a positive relationship between practicing mindfulness and pro-environmental attitudes and behaviors. Mindfulness would be promoting a double benefit [13]: on the one hand, it increases wellbeing by detaching it from materialistic and consumer logic; on the other, it actively promotes more sustainable behavior and lifestyle. From another perspective, the practice of mindfulness has spread rapidly among the world's adult population in recent years, following its proven effectiveness in regulating emotions and optimizing cognitive patterns. The number of studies and research on this practice and analysis of its efficacy with children and adolescents has been increasing due to its demonstrated effectiveness in improving more ecosocial behaviors, enhancing general wellbeing [17,18], improving psychological symptoms [19], and faster information processing. In the educational context, its practice has demonstrated effectiveness in cognitive performance and significant relationships in measures of stress, coping, and resilience [20]. However, there is still a shortage of papers on the influence of mindfulness on resilience in college students and even more on its role on ESD as a competence.

In sum, although the benefits of mindfulness are well-acknowledged in the educational literature, it is not considered a key element in ESD. Hence, the present study seeks to contribute to the literature of ESD in several ways. First, departing from the categorization of [4] and social psychology literature as our theoretical framework, we propose applying mindfulness as a core competence for ESD since it can be related to the six blocks of competences of ESD. Second, we try to empirically show the impact that mindfulness (as a competence) has on resilience and performance in higher education, thus, offering further empirical support for the need to consider mindfulness also on higher education. Finally, we consider that, in an educational context, mindfulness will not only have repercussions on students' consciousness regarding sustainability concerns, but it will also benefit the development of their empathic capacities and academic performance. Therefore, our study is an exploratory study which represents the first step for further intervention studies in higher education regarding how it contributes to CSD.

2. Literature Review

2.1. Mindfulness and Resilience

Mindfulness implies a state of consciousness in which attention is focused on events, experiences, and states of the present moment, both external and internal [7]. Thus, mindfulness is constantly being aware of events and experiences at the moment and accepting them as they are, rather than being absorbed in the past or worried about the future [21]. According to this definition, a mindful person is prone to be open to novelty, sensitive to context, and aware of multiple approaches to solving a problem [22]. Therefore, a mindful person might be more aware of the resources at hand. Thus, in our study, we follow this approach of dispositional mindfulness as a capacity to be conscious of events and experiences around. This approach is settled in both traditions on the study

of mindfulness: the Eastern based on self-regulation of attention that is present-oriented and is characterized by curiosity, openness, and acceptance [23]. This definition focus on meditative practice. Additionally, the Western approach in which mindfulness is defined by being in the present, sensitive to context and perspective, and guided (but not governed) by rules and routines [24]. Both approaches have their similarities and differences, "but the singularities of each approach can be placed within an underlying framework, wherein each contributes to the elucidation of the other" [25]. Therefore, we consider mindfulness as a capacity to be aware of the present moment, being conscious about the context and world that surround us. This capacity may help people to be aware of their own and others' emotions and the resources at hand when having difficult situations. This idea is related to the capacity to overcome obstacles and become even more resourceful after a difficult situation; that is, the capacity for resilience. Resilience is defined as an individual's capability to sustain a normal state of balance when exposed to exceptionally adverse situations [26]. Resilience does not eradicate stress or remove life adversities. Instead, it gives people the strength to handle problems effectively, overcome adversity, and move on with their lives [27]. In recent years, there has been growing research interest in discovering the facilitators of resilience. Beyond different character traits and skills, including self-efficacy, creative problem-solving skills, and the ability to focus on the present, mindfulness has been associated with resilience [28–30].

In the context of higher education, a growing number of theoretical and empirical research studies support the idea that mindfulness and resilience are connected (e.g., [31,32]). In this regard, ref. [33] concluded that the sustained practice of mindfulness can improve attentional and emotional self-regulation and affects students' capacity for resilience. Thus, it has been shown that when university students lack resilience, they are more likely to fall into situations of helplessness, apathy, depression, and anguish [34]. However, when they present high levels of resilience, they show a higher fit to university academic demands [35]. Along these lines, high levels of resilience have been associated with academic success [35,36]. Ref. [37] showed that individuals with greater mindfulness have greater resilience and, consequently, greater satisfaction with life. According to the authors, the awareness and acceptance aspects of mindfulness can facilitate the development of resilience and optimism, enthusiasm, and patience, characteristics of resilient individuals that can lead to a perception of wellbeing. According to [38], to maintain resilience, greater flexibility is required through attention and acceptance, skills that are integrated into mindfulness. In a study by [39], a positive relationship between resilience and mindfulness was observed, showing that both variables are revealed as predictors of psychological wellbeing in university students. However, there is still little research in this regard [40,41] and even more in the context of ESD. In this sense, mindfulness could be considered a holistic competence for ESD. In fact, following the previous categorization of competences for ESD [4], mindfulness might be related to responsibility, transcultural understanding, empathy, learning, and the ability to take action, and then it would be related to resilience. Thus, the challenge is to continue investigating this variable, which seeks, through education, to train tomorrow's citizens in creating a more sustainable world.

Therefore, according to previous evidence, we expect that:

Hypothesis 1. *Students' mindfulness is directly and positively related to their level of resilience.*

2.2. Resilience and Academic Performance

The study of resilience has attracted a growing research interest, especially in higher education settings, mainly because of the number of benefits that resilience has on students' wellbeing [42]. In this context, resilience helps students overcome stressful situations and pressure arising from their studies [43]. Since resilience is a dynamic capability through which students acquire the knowledge and skills to help them face an uncertain future with a positive attitude and optimism, resilient students will be able to cope with academic demands appropriately [44]. Moreover, resilience is one of the main dimensions

associated with psychological wellbeing and academic success [45]. Students' capacity for resilience will help them to persevere in their tasks and maintain a positive attitude when difficulties arise; this persistence in their studies might be directly related to academic performance. According to recent research, mindfulness and resilience seem to be related to academic performance in educational settings [46]. Hence, the relationship between resilience and its multiple benefits on wellbeing and performance is well supported in the literature, including resilience as a buffer effect preventing burnout or dropout [47,48] and resilience enhancing academic engagement [49]. Moreover, resilience is related to academic performance, although this relationship is mediated by other variables such as engagement and self-efficacy [42]. Thus, further research is needed to uncover the relationship between resilience and direct academic performance, such as the impact on students' grades.

Therefore, following previous research regarding the close relationship between resilience and performance we expect that:

Hypothesis 2. *Students' resilience is positively and directly related to their academic performance.*

3. Methodology

3.1. Sample Selection and Data Collection

This study was carried out as part of a collaboration agreement signed by three higher education institutions and one secondary school in three Spanish regions. The four institutions involved in the study offer onsite teaching.

This agreement allowed us to interview students from a broad range of spectrums (region, academic discipline, course, qualification, gender), which provided a diverse and highly representative sample, thus maximizing the reliability of the results.

Before the fieldwork, experts in the education area revised the questionnaire and pretested it on a group of 25 students. This process allowed us to improve the wording and confirm the suitability of the questionnaire. After this revision stage, we surveyed the students using an online questionnaire designed by the research team. Student anonymity was guaranteed to encourage participation, which motivated them to provide more honest answers. We also informed the students that we would aggregate the data to ensure confidentiality. Moreover, we followed the ethical standards, and our study passed the ethical committee of our university.

The questionnaire consists of 15 items: 10 related to mindfulness and 5 to resilience (see Appendix A). All items are measured on a 7-point Likert scale. All Likert-scaled indicators are expressed positively, and respondents have to state whether they agree or disagree with each statement included in the questionnaire.

The fieldwork took place between October 2018 and March 2019 and yielded a sample of 497 valid responses. We calculate descriptive analyses using SPSS to reveal the main characteristics of the sample (Table 1). The final sample comprises students mostly from University 1 (69%) and between 8% and 12% for the remaining participating institutions. From the total of 22 specific academic disciplines analyzed (covering a wide range from business and economic sciences, technological and experimental sciences, health sciences, and social sciences), 16 correspond to academic degrees, two to master's degrees, and four to second-cycle studies. Most students are second-year undergraduates (43.7%), followed by third-year students (20.9%). The fourth and first years represent roughly 14% and 10%, respectively, the secondary school around 8%, and the masters around 3%. The fifth and sixth years represent less than 1% each. The average age of the students in the sample is 22 years, and their average grade is 7.2 (out of a maximum of ten). Finally, the gender distribution is mainly female (74.6%).

Table 1. General sample characteristics.

Institution: Category (%)			
University 1 (69)	University 2 (12.1)	University 3 (11.1)	Secondary School (7.8)
Degree: Category (%)			
Business Administration [1] (12.1)	Industrial design engineering [2] (3.2)	Psychology [3] (14.5)	
Occupational therapy [1] (11.1)	Mechanical engineering [2] (1.8)	Medicine [3] (3.2)	
Labour relations and human resources [1] (10.7)	Agri-food engineering [2] (2.4)	Nursing [3] (2.4)	
Tourism [1] (5.6)	Chemical engineering [2] (1.6)	Audio-visual communication [4] (11.7)	
Finance and accounting [1] (2.0)	Electrical engineering [2] (1.0)	Advertising and public relations [4] (5.2)	
Economics [1] (0.8)	Master in human resources management [1] (0.8)	Second cycle studies [1,4] (8)	
Master in marketing [1] (1.8)			
Course: Category (%)			
First (9.9)	Second (43.7)	Third (20.9) Fourth + (15.1)	Postgraduate (2.6) Secondary school (7.8)
Gender: Category (%)		**Age average**	**Academic grade average**
Male (25.4) Female (74.6)		22 years old	7.2

Note: [1] represents disciplines from business and economic sciences; [2] represents disciplines from technological and experimental sciences; [3] represents disciplines from health sciences; [4] represents disciplines from social sciences.

3.2. Measurement Instruments

We followed [50] recommendations to prevent self-generated validity in the questionnaire design. Thus, we carefully ordered and wrote the questions in simple language with user-friendly terminology. We also sorted the analyzed constructs differently from the hypotheses (antecedents → mediating variable → consequences).

All the scales correspond precisely to their theoretical definitions, and we adapted them from well-known and validated scales in the literature. The reliability information (Cronbach's alpha) for the scales is presented in the Results section, Table 2.

Table 2. Correlation factors, means, and standard deviation (*n* = 497).

	Mean	**S.D.**	**MIND**	**RESIL**	**PERF**
Mindfulness	5.398	0.727	(0.804)		
Resilience	5.323	0.851	0.532 **	(0.784)	
Academic performance	7.156	0.883	0.105 *	0.174 **	-
Gender	0.25	0.435	0.058	−0.050	−0.174 **

* Significant correlation ($p < 0.05$). ** Significant correlation ($p < 0.01$).

Mindfulness. We measure mindfulness with the ten-item scale developed by [51] (e.g., "I get involved in almost everything I do.").

Resilience. We assess resilience with the five-item scale developed by [52] (e.g., "Dealing with difficult peers (or situations) helps me grow.").

Academic performance. Finally, we measure academic performance directly from the students' academic records.

We include students' gender as a control variable according to previous studies that mention the possibility of influencing students' achievements (e.g., [53]). We use the following categorization: 0 = female, 1 = male.

We follow Brislin's reverse translation method to guarantee equivalence between the original items and those used in other language versions. Two bilingual translators worked on the translation, one to translate from English to Spanish, and the other to translate the resulting Spanish version back into English without referring to the source text. The translators then compared the two English versions and judged them to be practically identical, which confirmed that the Spanish version accurately represented the two English versions. We show in Appendix A the complete scales used in the study.

3.3. Scale Validity and Reliability

First, using SPSS, we calculate descriptive analyses (i.e., means, standard deviations) and inter-correlations, and we use Cronbach's alpha coefficient [54] to check the scale's reliability ($\alpha > 0.7$).

We conduct Harman's single-factor test [55,56] to test common method variance bias. The results of the confirmatory factor analysis with the 15 indicators loading into a single factor ($\chi^2 (87) = 309.421$; CFI $= 0.890$; RMSEA $= 0.072$; BBNFI $= 0.855$; $\chi^2/\text{df} = 3.557$) shows a poor fit, thereby indicating that the single factor does not account for all the variance in the data. Therefore, we do not consider common method variance a problem in our research.

Next, we implement structural equation modeling (SEM) by AMOS to test the hypothesized model (see Figure 1), following the recommendations for mediating analyses for latent constructs and multiple mediators [57,58]. We test three models to verify the hypotheses: "M1.Proposed" assumes that mindfulness is positively related to resilience that in turn is conducive to academic performance; and in "M2.Partially Mediated", resilience partially mediates the relationship between mindfulness and performance, and, as recommended by [59], we also test an alternative model to show that the order of the mediating variables in our model is not arbitrary. Consequently, we test "M3.Alternative", in which mindfulness mediates the relationship between resilience and performance.
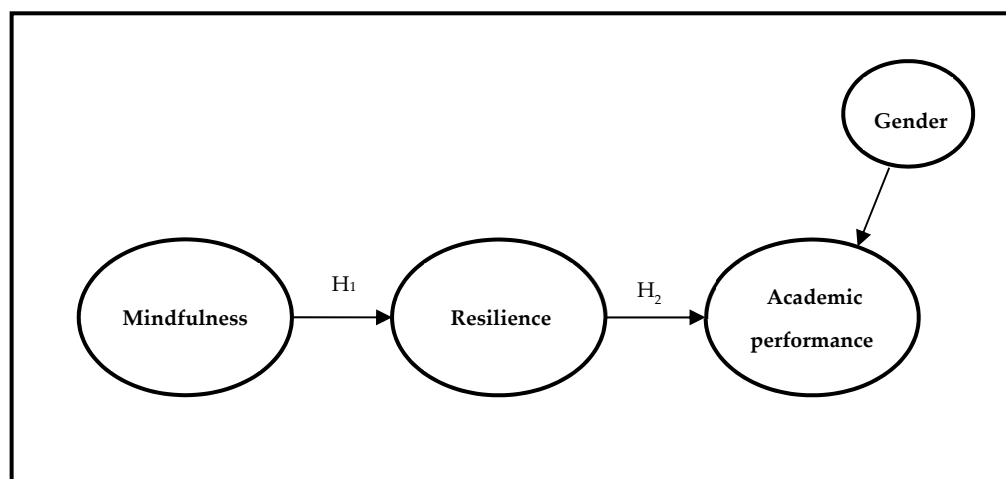
Figure 1. Hypothetical research model.

For the SEM analyses, we follow the maximum likelihood approach by testing absolute and relative indices for the goodness of fit [60]: the χ^2 index, Goodness of Fit Index (GFI), the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), and the Incremental Fit Index (IFI). Values below 0.08 for RMSEA [61] and higher than 0.90 for the remaining indices [62] indicates an acceptable fit. Finally, we compute the Akaike Information Criterion (AIC) to compare competing non-nested models; the lower the AIC index, the better the fit.

4. Results

Table 2 shows that all Cronbach's alpha coefficient values are above the minimum acceptable value of 0.7 [63].

Furthermore, the pattern of correlations indicates that, as expected, there is a positive and significant relationship between mindfulness and resilience. Note that the correlation of resilience and gender with performance is significant.

Model Fit: Structural Equation Modeling

Table 3 displays the results of the structural equation analyses. We fit our proposed model (M1) to the data. Mindfulness and resilience consist of ten and five indicators (items), respectively.

Table 3. Fit indices of the Structural Equation Models ($n = 497$).

Model	χ^2	df	GFI	RMSEA	CFI	TLI	IFI	AIC
Model 1 (M1)	358.94	114	0.92	0.07	0.88	0.86	0.88	436.94
Model 2 (M2)	423.18	116	0.91	0.07	0.85	0.83	0.85	497.18
Model 3 (M3)	428.26	117	0.91	0.07	0.85	0.83	0.85	500.26

Notes. χ^2 = Chi-square; df = degrees of freedom; GFI = Goodness of Fit Index; RMSEA = Root Mean Square Error Approximation; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; IFI = Incremental Fit Index; AIC = Akaike Information Criterion.

Our results show that M1.Proposed (in which mindfulness has a positive relationship with resilience, which is in turn related to academic performance) adequately fits the data. M2.Partially mediated model (in which we also directly relate mindfulness with performance) also shows good fit indexes; however, the AIC is higher in this second model (M2 AIC = 497.18), which, according to [64], implies there is a better fit for M1. Moreover, in M2, the direct relationship between mindfulness and performance is not significant ($\beta = 0.01$, n.s). Finally, we test M3.Alternative, in which mindfulness mediates the relationship between resilience and performance. As expected, the results are favorable to M1 since M3 shows a higher chi-square and AIC when compared to M1. Hence, the results displayed in Figure 2 provide favorable evidence for M1: (1) there is a positive and significant relationship between mindfulness and resilience, $\beta = 0.66$, $p < 0.01$; and (2) there is a direct significant relationship between resilience and performance, $\beta = 0.18$, $p < 0.01$. These findings also demonstrate that mindfulness and performance are fully mediated by resilience.
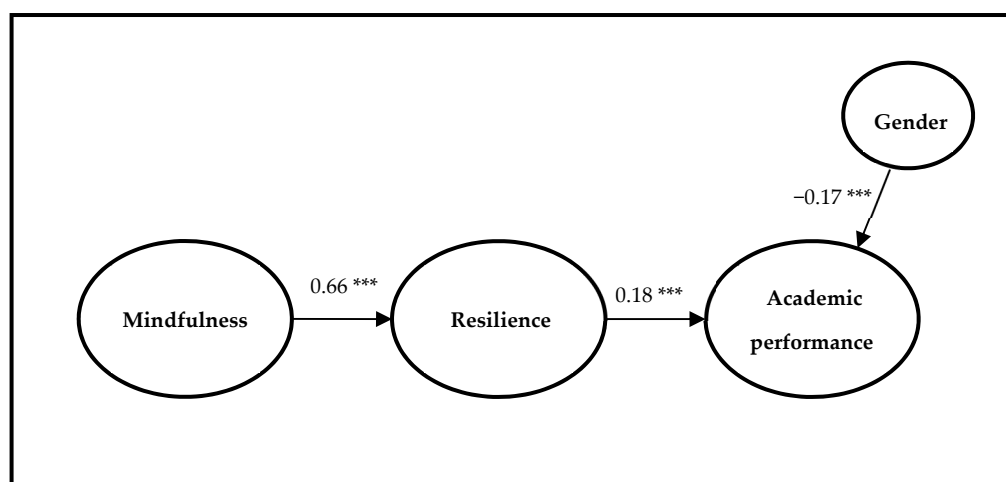
Figure 2. Empirical results of the research model. *** Significant correlation ($p < 0.05$).

5. Conclusions

The main goal of this study is to explore how mindfulness plays a key role in the learning process in response to the need to develop students' emotional competencies in ESD. Our results show how students' mindfulness has a positive impact on resilience. At the same time, resilience has a positive relationship with academic performance. Therefore, the results confirm our hypotheses regarding the role mindfulness plays as a promoter of resilience (Hypothesis 1) and the impact resilience has on academic performance (Hypothesis 2). Although it was not an aim of our study, we also find that gender is significantly and positively related to performance. Thus, women have higher grades than men, although the relationships between variables remain the same. Gender is a demographic variable that discriminates against students' academic achievements. For instance, research has shown female undergraduate grade point average to be higher than that achieved by male students after the first year of study [65] and across three years of undergraduate studies [66,67].

In sum, the main question we have attempted to answer in this research is whether mindfulness influences students' academic performance through resilience. Our study provides empirical evidence that the mindfulness–academic performance relationship is mediated by resilience. Our results can be generalized since they are obtained from three higher education institutions and one secondary school in three Spanish regions, comprising 22 academic disciplines from different areas.

Theoretical and Practical Implications for Education in Sustainable Development

We propose a model that relates the mindfulness construct, which has been revealed as an interesting tool to promote greater sustainable awareness, with the resilient capacity of university students and its impact on academic performance. Our study goes in line with previous research in terms of empirically showing the relationship of mindfulness and resilience in general (e.g., [29]) and specifically in education (e.g., [28] or [32]). Therefore, our research supports the benefits of mindfulness in higher education, adding the relationship with academic performance. Note that academic performance is objectively measured in our work (through students' grades), which gives extra value and support for our results. In this vein, most of the previous literature on mindfulness and resilience has been linked to students' wellbeing or self-efficacy, including subjective measures (e.g., [32]), which shows a part of the picture. However, our study, together with the recent research of [46], is the first one that offers additional data regarding mindfulness and resilience's impact on students' academic performance in higher education. On the other hand, the added value of our study departs from the idea that mindfulness needs to be considered as a key holistic competence in the competences for sustainable education according to previous research [4].

In this line, our research novelty relates to the need to contextualize our model into ESD. In recent years, interest has grown in developing skills for sustainable development in the classroom. Thus, one of the most recent advances in higher education for sustainability is the strong emergence of the discourse focused on the development of competencies for sustainability and its connection with the use of pedagogical approaches. Therefore, the well-known frame of reference proposed by [68] aims to connect the competencies for sustainable development with pedagogical approaches to provide a more complete, holistic, and systemic sustainable education for future leaders, decision-makers, educators, and agents of change. According to UNESCO, using different pedagogical approaches allows students to develop various learning processes that will help them improve their skills and abilities to learn and think. In this sense, higher education institutions, as essential agents of change for social development, are making a notable effort in incorporating development needs and social welfare into university curricula. The use of mindfulness as a pedagogical tool in the university and at other educational levels is gaining in strength, given the great possibilities for training students in individual sustainability. Ref. [69] affirms that "individuals committed to sustainability are characterized by creating harmony, interconnection, and relatively high levels of self-awareness in their values, thoughts,

behaviors, and actions, in addition to cultivating continuous individual growth in their physical abilities, emotional, social, philosophical, and intellectual. Individual sustainability means having a well-developed and proven value system that is aware of the importance and interconnectedness of all global biological systems and our rightful place among them". Thus, the practice of mindfulness in the classroom involves the incorporation of strategies and tools that allow young people to face each educational stage with the highest possibilities of use, training, experience, and personal growth [70–72]. It also contributes significantly, as demonstrated in our work, to the development of sustainable individual competencies such as resilience, which will contribute, in the mid-and long term, to the development of more sustainable societies.

Furthermore, it is worth mentioning that, as indicated by [73], in university education, technical professional skills have generally been enhanced to the detriment of socio-personal skills, emotional self-regulation, resilience, and stress control—key aspects to be considered within the curricular program. The development of these socio-emotional skills can be enhanced with mindfulness techniques. Various works, such as this one, have empirically analyzed how mindfulness benefits university students [74] and, in turn, these capacities have yielded better academic performance and general wellbeing.

This research has some limitations, which in turn open lines for future research. For instance, the sample consists mainly of higher education students and a smaller group of secondary school students. It would be useful to validate the analysis at different education stages and compare the differences between them. Moreover, most students are from a specific Spanish community; therefore, future research could replicate this study in other Spanish locations and in different countries to consider other cultural and geographical settings. Finally, most of the subjects in our sample are women; thus, having a more balanced dataset would allow us to compare gender differences.

Author Contributions: Conceptualization, M.E., D.M. and A.R.-S.; Methodology, A.R.-S. and L.V.-M.; Software, A.R.-S. and L.V.-M.; Validation, A.R.-S. and L.V.-M.; Formal Analysis, A.R.-S. and L.V.-M.; Investigation, M.E., D.M. and A.R.-S.; Resources, M.E., D.M. and A.R.-S.; Writing—Original Draft Preparation, M.E., A.R.-S. and L.V.-M.; Writing—Review, M.E. and A.R.-S. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: There is no conflict of interest.

Appendix A

Mindfulness

1. I like to investigate things	1	2	3	4	5	6	7
2. I am always open to new ways of doing things	1	2	3	4	5	6	7
3. I am alert to new developments	1	2	3	4	5	6	7
4. I "get involved" in almost everything I do	1	2	3	4	5	6	7
5. I am very creative	1	2	3	4	5	6	7
6. I attend to the 'big picture'	1	2	3	4	5	6	7
7. I am very curious	1	2	3	4	5	6	7
8. I try to think of new ways of doing things	1	2	3	4	5	6	7
9. I like to be challenged intellectually	1	2	3	4	5	6	7
10. I like to figure out how things work	1	2	3	4	5	6	7

Emily A. P. Haigh, Michael T. Moore, Todd B. Kashdan and David M. Fresco (2011). Examination of the Factor Structure and Concurrent Validity of the Langer Mindfulness/Mindlessness Scale, Assessment, 18, 11–26.

Resilience

1. I am getting better in my studies because I learn from my mistakes	1	2	3	4	5	6	7
2. Dealing with difficult classmates (or situations) enables me to grow	1	2	3	4	5	6	7
3. I see challenges as an opportunity to learn	1	2	3	4	5	6	7
4. I find ways to handle unexpected situations	1	2	3	4	5	6	7
5. I bounce back when I confront setbacks in my studies	1	2	3	4	5	6	7

Caza, B., & Bagozzi, R. P. (2010). Reacting to adversity: An identity-based perspective (Working Paper). Used in: Stephens, Heaphy, Carmeli, Spreitzer, and Dutton (2013). Relationship Quality and Virtuousness: Emotional Carrying Capacity as a Source of Individual and Team Resilience. The Journal of Applied Behavioral Science, 49, 13–41.

References

1. Tejedor, G.; Segalàs, J.; Barrón, A.; Fernàndez-Morilla, M.; Fuertes, M.T.; Ruiz-Morales, J.; Gutiérrez, I.; García-Gonzàlez, E.; Aramburuzabala, P.; Hernàndez, A. Didactic strategies to promote competencies in sustainability. *Sustainability* **2019**, *17*, 2086. [CrossRef]
2. Robina-Ramírez, R.; Merodio, J.A.M.; McCallum, S. What role do emotions play in transforming students' environmental behaviour at school? *J. Clean. Prod.* **2020**, *258*, 120638. [CrossRef]
3. Watson, M.K.; Lozano, R.; Noyes, C.; Rodgers, M. Assessing curricula contribution to sustainability more holistically: Experiences from the integration of curricula assessment and students' perceptions at the Georgia Institute of Technology. *J. Clean. Prod.* **2013**, *61*, 106–116. [CrossRef]
4. Lambrechts, W.; Mulà, I.; Ceulemans, K.; Molderez, I.; Gaeremynck, V. The integration of competences for sustainable development in higher education: An analysis of bachelor programs in management. *J. Clean. Prod.* **2013**, *48*, 65–73. [CrossRef]
5. Roorda, N. Assessment and policy development of sustainability in higher education with AISHE. In *Teaching Sustainability at Universities: Towards Curriculum Greening, Environmental Education, Communication and Sustainability*; Filho, W.L., Ed.; Peter Lang: Frankfurt, Germany, 2002.
6. Cebrián, G.; Junyent, M. Competences in Education for Sustainable Development: Exploring the Student Teachers' Views. *Sustainability* **2015**, *7*, 2768–2786. [CrossRef]
7. Dane, E. Paying attention to mindfulness and its effects on task performance in the workplace. *J. Manag.* **2011**, *37*, 997–1018. [CrossRef]
8. Sternberg, R.J. The nature of creativity. *Creat. Res. J.* **2006**, *18*, 87–98.
9. Siqueira, R.; Pitassi, C. Sustainability-oriented innovations: Can mindfulness make a difference? *J. Clean. Prod.* **2016**, *139*, 1181–1190. [CrossRef]
10. Cheng, X.; Ma, Y.; Li, J.; Cai, Y.; Li, L.; Zhang, J. Mindfulness and psychological distress in kindergarten teachers: The mediating role of emotional intelligence. *Int. J. Environ. Res. Public Health* **2020**, *17*, 8212. [CrossRef]
11. Erus, S.M.; Deniz, M.E. The mediating role of emotional intelligence and marital adjustment in the relationship between mindfulness in marriage and subjective well-being. *Pegem J. Educ. Instr.* **2020**, *10*, 317–354. [CrossRef]
12. Teal, C.; Downey, L.A.; Lomas, J.E.; Ford, T.C.; Bunnett, E.R.; Stough, C. The role of dispositional mindfulness and emotional intelligence in adolescent males. *Mindfulness* **2019**, *10*, 159–167. [CrossRef]
13. Ericson, T.; Kjønstad, B.G.; Barstad, A. Mindfulness and sustainability. *Ecol. Econ.* **2014**, *104*, 73–79. [CrossRef]
14. Doran, P. Is there a role for contemporary practices of askesis in supporting a transition to sustainable consumption? *Int. J. Green Econ.* **2011**, *5*, 15–40. [CrossRef]
15. Carvalho, A. Subjectivity, ecology and meditation. Performing interconnectedness. *Subjectivity* **2014**, *7*, 131–150. [CrossRef]
16. Amel, E.L.; Manning, C.M.; Scott, B.A. Mindfulness and Sustainable Behavior: Pondering Attention and Awareness as Means for Increasing Green Behavior. *Ecopsychology* **2009**, *1*, 14–25. [CrossRef]
17. Kuyken, W.; Weare, K.; Ukoumunne, O.C.; Vicary, R.; Motton, N.; Burnett, R.; Cullen, C.; Hennelly, S.; Huppert, F. Effectiveness of the Mindfulness in Schools Programme: Non-randomised controlled feasibility study. *Br. J. Psychiatry* **2013**, *203*, 126–131. [CrossRef]
18. Mercader, A. Problemas en el adolescente, mindfulness y rendimiento escolar en estudiantes de secundaria. Estudio preliminar. *Propós. Represent.* **2020**, *8*, 1. [CrossRef]

19. Zoogman, S.; Goldberg, S.B.; Hoyt, W.T.; Miller, L. Mindfulness interventions with youth: A meta-analysis. *Mindfulness* **2015**, *6*, 290–302. [CrossRef]
20. Zenner, C.; Herrnleben-Kurz, S.; Walach, H. Mindfulness-based interventions in schools—A systematic review and meta-analysis. *Front. Psychol.* **2014**, *5*, 603. [CrossRef]
21. Brown, K.W.; Ryan, R.M. The benefits of being present: Mindfulness and its role in psychological well-being. *J. Personal. Soc. Psychol.* **2003**, *84*, 822–848. [CrossRef]
22. Bodner, T.; Langer, E. Individual Differences in Mindfulness: The Mindfulness/Mindlessness Scale. In Proceedings of the 13th Annual American Psychological Society Conference, Toronto, ON, Canada, 14–17 June 2001.
23. Bishop, S.R.; Lau, M.; Shapiro, S.; Carlson, L.; Anderson, N.D.; Carmody, J.; Segal, Z.V.; Abbey, S.S.; Michael, V. Drew. Mindfulness: A proposed operational definition. *Clin. Psychol. Sci. Pract.* **2004**, *11*, 230. [CrossRef]
24. Langer, E.J. A mindful education. *Educ. Psychol.* **1993**, *28*, 43–50. [CrossRef]
25. Djikic, M. Integrating eastern and western approaches. In *The Wiley Blackwell Handbook of Mindfulness*; John Wiley and Sons: Hoboken, NJ, USA, 2014; p. 137.
26. Bonanno, G.A. Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *Am. Psychol.* **2004**, *59*, 20. [CrossRef] [PubMed]
27. Richardson, G.E. The meta-theory of resilience and resiliency. *J. Clin. Psychol.* **2002**, *58*, 307–321. [CrossRef] [PubMed]
28. Keye, M.D.; Pidgeon, A.M. Investigation of the relationship between resilience, mindfulness, and academic self-efficacy. *Open J. Soc. Sci.* **2013**, *1*, 1–4. [CrossRef]
29. Thompson, R.W.; Arnkoff, D.B.; Glass, C.R. Conceptualizing mindfulness and acceptance as components of psychological resilience to trauma. *Trauma Violence Abus.* **2011**, *12*, 220–235. [CrossRef]
30. Van Breda, A.D. *Resilience Theory: A Literature Review*; South African Military Health Service: Pretoria, South Africa, 2001.
31. Asthana, A.N. Organisational Citizenship Behaviour of MBA students: The role of mindfulness and resilience. *Int. J. Manag. Educ.* **2021**, *19*, 100548. [CrossRef]
32. Zarotti, N.; Povah, C.; Simpson, J. Mindfulness mediates the relationship between cognitive reappraisal and resilience in higher education students. *Personal. Individ. Differ.* **2020**, *156*, 109795. [CrossRef]
33. Meiklejohn, J.; Phillips, C.; Freedman, M.L.; Griffin, M.L.; Biegel, G.; Roach, A.; Frank, J.; Burke, C.; Pinger, L.; Soloway, G. Integrating mindfulness training into K-12 education: Fostering the resilience of teachers and students. *Mindfulness* **2012**, *3*, 291–307. [CrossRef]
34. Bragagnolo, G.; Rinarudo, A.; Cravero, N.; Fomía, S.; Martínez, G.; Vergara, S. *Optimismo, esperanza, autoestima y depresión en estudiantes de Psicología*; Universidad Nacional de Rosario: Buenos Aires, Argentina, 2005.
35. Munro, B.; Pooley, J.A. Differences in resilience and university adjustment between school leaver and mature entry university students. *Aust. Community Psychol.* **2009**, *21*, 50–61.
36. Leary, K.A.; DeRosier, M.E. Factors promoting positive adaptation and resilience during the transition to college. *Psychology* **2012**, *3*, 1215–1222. [CrossRef]
37. Bajaj, B.; Pande, N. Mediating role of resilience in the impact of mindfulness on life satisfaction and affect as indices of subjective well-being. *Personal. Individ. Differ.* **2016**, *93*, 63–67. [CrossRef]
38. Waugh, C.E.; Thompson, R.J.; Gotlib, I.H. Flexible emotional responsiveness in trait resilience. *Emotion* **2011**, *11*, 1059–1067. [CrossRef] [PubMed]
39. Pidgeon, A.M.; Keye, M. Relationship between Resilience, Mindfulness, and Psychological Well-Being in University Students. *Int. J. Lib. Arts Soc. Sci.* **2014**, *2*, 27–32.
40. González, M.; Artuch, R. Perfiles de resiliencia y Estrategias de Afrontamiento en la Universidad: Variables contextuales y Demográficas. *Electron. J. Res. Educ. Psychol.* **2014**, *12*, 621–648. [CrossRef]
41. Ríos, M.I.; Carrillo, C.; Sabuco, E. Resiliencia y Síndrome de Burnout en estudiantes de enfermería y su relación con variables sociodemográficas y de relación interpersonal. *Int. J. Psychol. Res.* **2012**, *5*, 88–95.
42. Ayala, J.C.; Manzano, G. Academic performance of first-year university students: The influence of resilience and engagement. *High. Educ. Res. Dev.* **2018**, *37*, 1321–1335. [CrossRef]
43. Vizoso-Gómez, C.; Arias-Gundín, O. Resiliencia, optimismo y burnout académico en estudiantes universitarios. *Eur. J. Educ. Psychol.* **2018**, *11*, 47–59. [CrossRef]
44. Fínez, M.J.; Morán, C. La resiliencia y su relación con salud y ansiedad en estudiantes españoles. *Int. J. Dev. Educ. Psychol.* **2015**, *1*, 409–416.
45. Kristjánsson, K. Positive psychology and positive education: Old wine in new bottles? *Educ. Psychol.* **2012**, *47*, 86–105. [CrossRef]
46. Egan, H.; O'Hara, M.; Cook, A.; Mantzios, M. Mindfulness, self-compassion, resiliency and wellbeing in higher education: A recipe to increase academic performance. *J. Furth. High. Educ.* **2021**, *46*, 301–311. [CrossRef]
47. García-Izquierdo, M.; Ríos-Risquez, M.I.; Carrillo-García, C.; Sabuco-Tebar, E.D.L.Á. The moderating role of resilience in the relationship between academic burnout and the perception of psychological health in nursing students. *Educ. Psychol.* **2018**, *38*, 1068–1079. [CrossRef]
48. Hartley, M.T. Increasing resilience: Strategies for reducing dropout rates for college students with psychiatric disabilities. *Am. J. Psychiatr. Rehabil.* **2010**, *13*, 295–315. [CrossRef]

49. Romano, L.; Angelini, G.; Consiglio, P.; Fiorilli, C. Academic Resilience and Engagement in High School Students: The Mediating Role of Perceived Teacher Emotional Support. *Eur. J. Investig. Health Psychol. Educ.* **2021**, *11*, 334–344. [CrossRef] [PubMed]

50. Ye, J.; Marinova, D.; Singh, J. Strategic change implementation and performance loss in the front lines. *J. Mark.* **2007**, *71*, 156–171. [CrossRef]

51. Haigh, E.A.; Moore, M.T.; Kashdan, T.B.; Fresco, D.M. Examination of the factor structure and concurrent validity of the Langer Mindfulness/Mindlessness Scale. *Assessment* **2011**, *18*, 11–26. [CrossRef]

52. Caza, A.; Bagozzi, R.P.; Woolley, L.; Levy, L.; Caza, B.B. Psychological capital and authentic leadership: Measurement, gender, and cultural extension. *Asia-Pac. J. Bus. Adm.* **2010**, *2*, 53–70. [CrossRef]

53. Sheard, M. Hardiness commitment, gender, and age differentiate university academic performance. *Br. J. Educ. Psychol.* **2009**, *79*, 189–204. [CrossRef] [PubMed]

54. Cronbach, L.J. Coefficient alpha and the internal structure of tests. *Psychometrika* **1951**, *16*, 297–334. [CrossRef]

55. Podsakoff, P.M.; Mackenzie, S.B.; Lee, J.Y.; Podsakoff, N.P. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *J. Appl. Psychol.* **2003**, *885*, 10–1037. [CrossRef] [PubMed]

56. Podsakoff, P.M.; Organ, D.W. Self-reports in organizational research: Problems and prospects. *J. Manag.* **1986**, *12*, 531–544. [CrossRef]

57. Holmbeck, G.N. Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *J. Consult. Clin. Psychol.* **1997**, *65*, 599. [CrossRef] [PubMed]

58. James, L.R.; Mulaik, S.A.; Brett, J.M. A tale of two methods. *Organ. Res. Methods* **2006**, *9*, 233–244. [CrossRef]

59. Kline, R.B. Software review: Software programs for structural equation modeling: Amos, EQS, and LISREL. *J. Psychoeduc. Assess.* **1989**, *16*, 343–364. [CrossRef]

60. Marsh, H.W.; Balla, J.R.; Hau, K.T. An evaluation of incremental fit indices: A clarification of mathematical and empirical properties. *Adv. Struct. Equ. Model. Issues Tech.* **1996**, 315–353.

61. Browne, M.W.; Cudeck, R. Alternative ways of assessing model fit. *Test. Struct. Equ. Models* **1993**, *154*, 136. [CrossRef]

62. Hoyle, R.H. *Structural Equation Modeling: Concepts, Issues, and Applications*; Sage: Thousand Oaks, CA, USA, 1995.

63. Nunnally, J. *Psychometric Theory*; McGraw Hill: New York, NY, USA, 1979; p. 640.

64. Akaike, H. Factor analysis and AIC. In *Selected Papers of Hirotugu Akaike*; Springer: New York, NY, USA, 1987; pp. 371–386.

65. Strahan, E.Y. The effects of social anxiety and social skills on academic performance. *Personal. Individ. Differ.* **2003**, *34*, 347–366. [CrossRef]

66. Baker, S.R. A prospective longitudinal investigation of social problem-solving appraisals on adjustment to university, stress, health, and academic motivation and performance. *Personal. Individ. Differ.* **2003**, *35*, 569–591. [CrossRef]

67. Woodfield, R.; Jessop, D.; McMillan, L. Gender differences in undergraduate attendance rates. *Stud. High. Educ.* **2006**, *31*, 1–22. [CrossRef]

68. Lozano, R.; Barreiro-Gen, M. *Developing Sustainability Competences through Pedagogical Approaches: Experiences from International Case Studies*; Springer Nature: New York, NY, USA, 2021.

69. Pappas, J.B.; Pappas, E.C. The Sustainable Personality: Values and Behaviors in Individual Sustainability. *Int. J. High. Educ.* **2015**, *4*, 12–21. [CrossRef]

70. Barrett, B.; Grabow, M.; Middlecamp, C.; Mooney, M.; Checovich, M.; Converse, A.; Gillespie, B.; Yates, J. Mindful climate action: Health and environmental co-benefits from mindfulness-based behavioral training. *Sustainability* **2016**, *8*, 1040. [CrossRef] [PubMed]

71. Helm, S.; Subramaniam, B. Exploring Socio-Cognitive Mindfulness in the Context of Sustainable Consumption. *Sustainability* **2019**, *11*, 3692. [CrossRef]

72. Wamsler, C.; Brossmann, J.; Hendersson, H.; Kristjansdottir, R.; McDonald, C.; Scarampi, P. Mindfulness in sustainability science, practice, and teaching. *Sustain. Sci.* **2018**, *13*, 143–162. [CrossRef] [PubMed]

73. Estrada, M.; Monferrer, D.; Rodríguez-Sánchez, A.; Moliner, M.A. Does emotional intelligence influence academic performance? The role of compassion and engagement in education for sustainable development. *Sustainability* **2021**, *13*, 1721. [CrossRef]

74. Sears, S.R.; Kraus, S.; Carlough, K.; Treat, E. Perceived Benefits and Doubts of participants in a Weekly Meditation Study. *Mindfulness* **2011**, *2*, 167–174. [CrossRef]