

THE IMPLEMENTATION OF AN EDUPRENEURSHIP LEARNING MODEL BASED ON TORAJAN LOCAL WISDOM FOR STUDENTS OF THE ENGLISH EDUCATION STUDY PROGRAM AT UKI TORAJA

Shilfani¹, Nehru P. Pongsapan², Marselina Ponglimbong³

^{1,2,3}English Education Department, Faculty of Teacher Training and Education, Christian University of Indonesia Toraja, Indonesia

ARTICLE INFO	ABSTRACT
Article history: Received: June 17, 2026 Revised: June 27, 2026 Accepted: June 28, 2026 Published: June 30, 2026 Keywords: Contextual Learning, Edupreneurship Higher Education Innovation Local Wisdom Torajan Culture	The growing demand for entrepreneurial competencies in higher education has encouraged universities to adopt contextual learning approaches that integrate local cultural resources into entrepreneurship education. However, empirical studies investigating the implementation of local wisdom-based <i>edupreneurship</i> in teacher education remain limited, particularly within English Education Study Programs. This study aimed to investigate the implementation of a local wisdom-based <i>edupreneurship</i> learning model and evaluate its effectiveness in improving the entrepreneurial learning outcomes of students in the English Education Study Program at UKI Toraja. A quantitative pre-experimental approach employing a One-Group Pretest-Posttest Design was adopted. The participants were 23 fifth-semester students selected through purposive sampling. Data were collected using an achievement test, classroom observation, and documentation. The intervention integrated Torajan local wisdom into contextual <i>edupreneurship</i> learning through collaborative discussions, business idea development, product prototyping, and project presentations. The findings revealed an improvement in students' entrepreneurial learning outcomes, with the mean score increasing from 46.52 on the pretest to 48.91 on the posttest. The paired comparison indicated a statistically significant difference between the pretest and posttest scores, suggesting that the learning model positively enhanced students' entrepreneurial competence. Classroom observations further demonstrated increased participation, collaboration, creativity, and entrepreneurial initiative throughout the learning process. These findings indicate that integrating Torajan local wisdom into <i>edupreneurship</i> learning provides a meaningful contextual learning experience while strengthening students' entrepreneurial competence. The study contributes to the development of culturally responsive entrepreneurship education and offers a practical instructional model that can be adapted by higher education institutions in culturally diverse regions. <i>This is an open access article under the CC BY-SA license.</i> 
How to Cite: Shilfani, Pongsapan, N. P., & Ponglimbong, M. . (2026). The Implementation of an Edupreneurship Learning Model Based on Torajan Local Wisdom for Students of the English Education Study Program at Uki Toraja. Journal of Language Testing and Assessment, 6(1), 24-34. https://doi.org/10.56983/jlta.v6i1.2030	
Corresponding Author: Shilfani English Education Department Christian University of Indonesia Toraja Email: shilfanilanlarobu@gmail.com	

INTRODUCTION

The demands placed on higher education have evolved considerably in response to rapid technological advancement, globalization, and increasingly complex labor market expectations. Universities are no longer expected to produce graduates who possess strong disciplinary knowledge alone; they are also expected to cultivate creativity, innovation, critical thinking, adaptability, and entrepreneurial competence. As a result, entrepreneurship education has become an important strategic component of higher education, equipping students with the ability to recognize opportunities, create value, and respond effectively to social and economic challenges. Numerous studies have demonstrated that entrepreneurship education contributes positively to students' entrepreneurial knowledge, self-efficacy, innovative thinking, and entrepreneurial intentions, particularly when learning experiences are authentic and practice-oriented (Anubhav et al., 2024; Martinez-Gregorio et al., 2021; Nabi et al., 2021).

Among the various approaches to entrepreneurship education, *edupreneurship* has attracted growing attention because it combines educational objectives with entrepreneurial practice. Rather than emphasizing business theory alone, *edupreneurship* encourages students to engage directly with real-world problems, identify opportunities within their surroundings, and develop innovative solutions that have practical value. Through experiential and contextual learning activities, students are expected to transform theoretical understanding into entrepreneurial action. Previous research has reported that this approach enhances creativity, entrepreneurial competence, and graduate employability (Gómez, 2024; Lackeus, 2020; Rodrigues, 2023). However, most existing studies have concentrated on entrepreneurship education in general or on technology-driven innovation, while comparatively little attention has been given to the integration of indigenous knowledge and local cultural resources into *edupreneurship*, particularly in teacher education programs.

At the same time, there is growing international recognition that indigenous knowledge and local wisdom represent valuable educational resources capable of enriching higher education. Integrating cultural knowledge into learning not only strengthens students' understanding of their social environment but also contributes to cultural preservation, sustainable development, and community empowerment (Ayandibu, 2025; Brondizio et al., 2021; Tamtik, 2023). Within entrepreneurship education, local wisdom provides authentic contexts from which students can identify business opportunities rooted in the unique characteristics of their communities. Nevertheless, empirical studies examining the systematic integration of local wisdom into *edupreneurship* learning remain relatively limited, especially in English teacher education where entrepreneurship is rarely positioned as an essential professional competency.

The cultural landscape of Toraja offers an ideal setting for addressing this issue. Widely recognized for its distinctive traditions, customary architecture, wood carving, weaving, coffee, culinary heritage, and internationally known cultural tourism, Toraja possesses abundant cultural and economic resources with entrepreneurial potential. These local assets extend beyond their cultural significance; they provide authentic learning materials through which students can explore business opportunities while strengthening their appreciation of local identity. Embedding Torajan local wisdom within entrepreneurship education therefore creates opportunities for students to connect academic learning with the realities of their communities and to develop entrepreneurial ideas that are both culturally meaningful and economically relevant.

Despite the increasing number of studies on entrepreneurship education, an important gap remains. Existing research has largely focused on improving entrepreneurial intention, business competence, or entrepreneurial mindset without paying sufficient attention to how indigenous cultural values can be systematically incorporated into entrepreneurship learning. Moreover, empirical evidence regarding the implementation of local wisdom-based *edupreneurship* in English Education Study Programs is still scarce. This indicates the need for a contextual instructional model capable of integrating entrepreneurial learning with local cultural resources while preparing future English teachers to become innovative, adaptive, and socially responsive graduates.

Addressing this gap, the present study introduces a local wisdom-based *edupreneurship* learning model specifically designed for students of the English Education Study Program at UKI Toraja. The originality of this research lies not only in integrating Torajan cultural values into entrepreneurship learning but also in applying this integration within an English teacher education context, where entrepreneurship has traditionally received limited attention. By combining contextual learning principles with indigenous cultural knowledge, the proposed model enables students to transform local resources into entrepreneurial ideas while simultaneously strengthening their pedagogical competence and cultural awareness.

Accordingly, this study aims to investigate the implementation of the local wisdom-based *edupreneurship* learning model and to evaluate its effectiveness in improving the entrepreneurial learning outcomes of English Education students at UKI Toraja. It is expected that the findings will contribute to the expanding body of knowledge on culturally responsive entrepreneurship education while offering practical insights for universities seeking to integrate local wisdom into innovative and sustainable higher education practices.

RESEARCH METHOD

This research uses quantitative method with pre-experimental research design of One-Group Pretest-Posttest Design to observe the impact of local wisdom-based *edupreneurship* learning model on students' entrepreneurial learning outcomes.

This strategy provided a pretest to participants prior to the intervention and a posttest after the learning activities to determine changes that might be attributed to the treatment.

Table 1 One-Group Pretest-Posttest Design

Pretest	Treatment	Posttest
O_1	X	O_2

Notes: Pretest (O_1) examines students' initial knowledge; Treatment (X) implements the local wisdom-based *edupreneurship* learning paradigm; and posttest (O_2) measures changes following treatment.

The research was carried out at the English Education Study Program, UKI Toraja, from March to December 2024. The participants were 23 fifth-semester students recruited by

purposive sampling. All participants had attended the Entrepreneurship course and could be considered to have gained similar basic knowledge before the intervention.

The research equipment were: (1) achievement test, (2) observation sheet, (3) documentation. The accomplishment exam was a test with ten multiple choice items to measure the students' grasp on the entrepreneurial ideas and the application of Torajan local wisdom in entrepreneurial activities. The observation sheet is used to monitor students' engagement, collaboration, creativity, communication, and entrepreneurial initiative during the learning process. To further support and validate the findings from the tests and the classroom observation, documentation in the form of images, students' business plans, presentation material and product prototypes were collected.

Before the intervention, the research tools were assessed by specialists in entrepreneurial education and English education for content validity. Their recommendations were used to adapt each instrument to make it relevant, clear and appropriate. Before administering the accomplishment test, the internal consistency of the test was studied.

The instructional intervention unfolded across three distinct phases. In the initial stage, a pretest was administered to establish a baseline measure of the participants' existing entrepreneurial literacy. Following this, the core treatment was deployed through an *edupreneurship* learning model anchored in both Torajan cultural heritage and contextual teaching and learning (CTL) methodologies. During this phase, students engaged in collaborative dialogue to map out business opportunities utilizing regional assets, formulated conceptual ventures, engineered basic product prototypes, and delivered group project presentations. To capture qualitative dynamics during these activities, continuous classroom observations were maintained to track student involvement and emergent entrepreneurial mindsets. The process concluded with a posttest utilizing the original assessment tool, allowing for a direct evaluation of shifts in learning outcomes attributable to the program.

Descriptive and inferential statistics were used to analyze the data collected and to compare the students' learning outcomes before and after the implementation of the local wisdom-based *edupreneurship* learning model.

RESULT AND DISCUSSION

Result

Students' Pretest Performance

To evaluate students' entrepreneurial literacy and their grasp of embedding local wisdom into business practices, a baseline assessment was conducted. The descriptive analysis indicate an initial mean score of 46.52, reflecting a moderate level of foundational knowledge among participants before the instructional intervention. Furthermore, the pretest scores ranged from a minimum of 35 to a maximum of 50, highlighting a distinct variance in the students' prior understanding.

Table 2. Descriptive Statistics of Pretest and Posttest Scores

Variable	N	Mean	Minimum	Maximum
----------	---	------	---------	---------

Pretest	23	46.52	35	50
Posttest	23	48.91	40	50

Student Pretest Score Distribution (n=23)

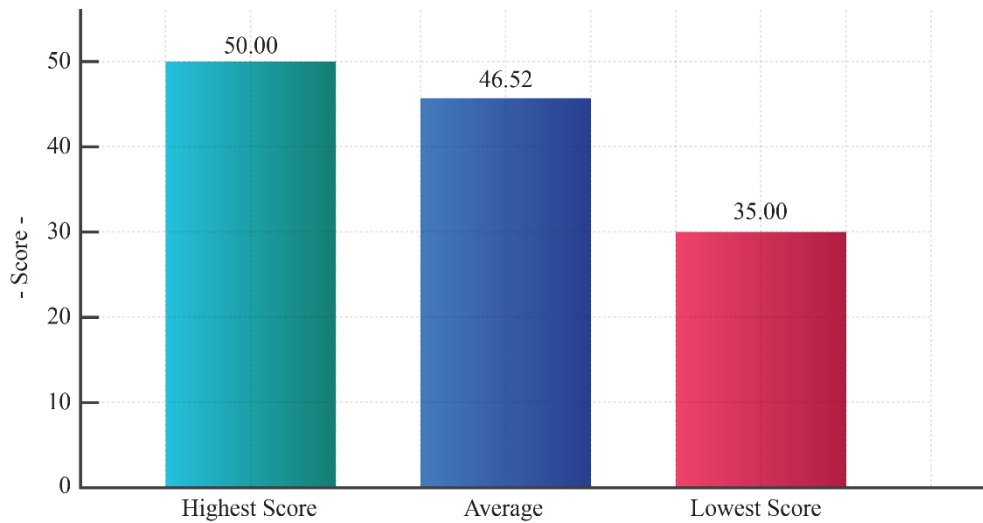


Fig. 1. Student Pretest Score Distribution

Students' Posttest Performance

Upon completing the local wisdom-integrated *edupreneurship* program, students underwent the identical assessment to evaluate post-intervention outcomes. The resulting data demonstrated a demonstrable shift upward in academic performance. Specifically, the average score rose to 48.91, accompanied by a notable increase in the lowest recorded score from 35 to 40. Although the maximum score remained capped at 50, indicating that top-performing students sustained their high proficiency, the overall mean advanced by 2.39 points. This margin underscores a meaningful growth in the participants' entrepreneurial competencies following the instructional activities.

Student Posttest Score Distribution (n=23)

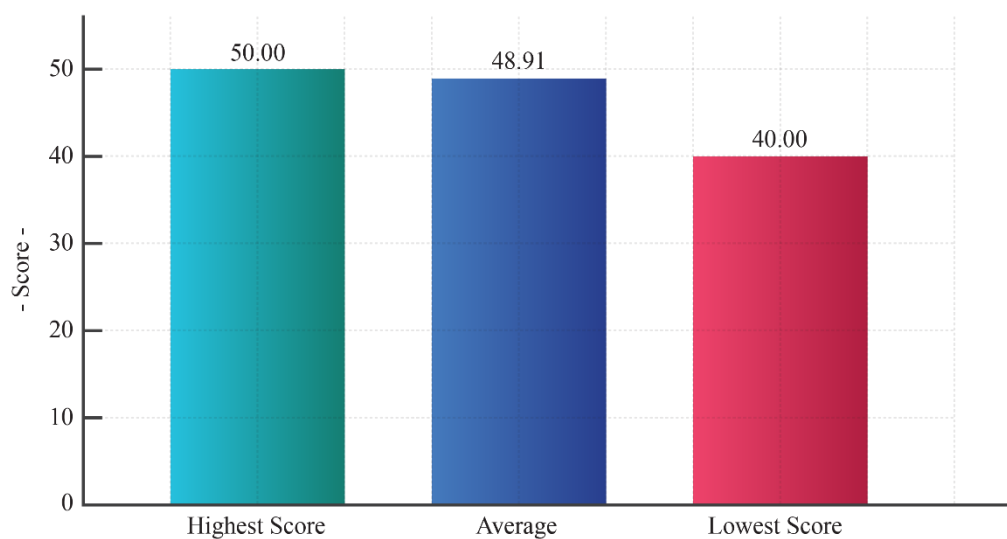


Fig. 2. Student Posttest Score Distribution

Comparison of Pretest and Posttest Scores

A comparison between students' pretest and posttest scores is presented in fig. 3 below.

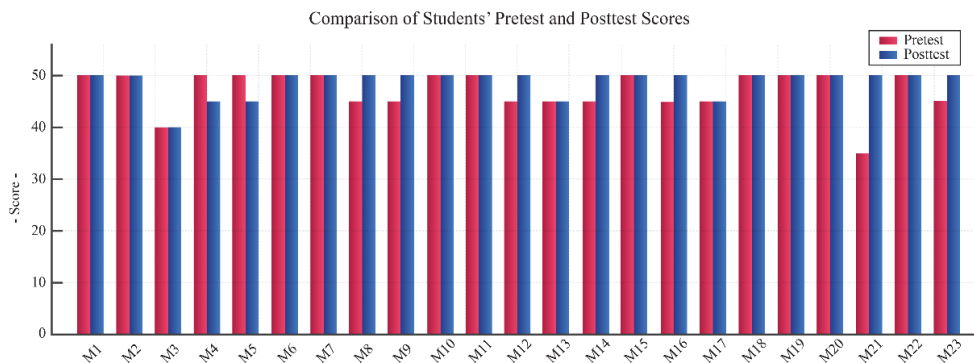


Fig. 3. Comparison of Students' Pretest and Posttest Scores

Paired Sample t-Test

To evaluate whether the recorded academic gains were statistically meaningful, a paired-samples t-test was executed. The inferential analysis yielded a calculated t -value of 4.76, surpassing the critical threshold of 2.074 with 22 degrees of freedom ($df = 22$) at the $\alpha = 0.05$ significance level. Consequently, the null hypothesis (H_0) was rejected. This outcome confirms a statistically significant divergence between the students' initial pretest marks and their subsequent posttest scores, validating the impact of the intervention.

Table 3. Paired Samples t-test Results

Variable	Mean Difference	t	df	Sig.
Pretest-Posttest	2.39	4.76	22	< 0.05

Taken together, these results provide strong empirical evidence that integrating local wisdom into the *edupreneurship* learning model substantially enhances students' academic outcomes in entrepreneurship.

To complement the aforementioned data, the comprehensive statistical results of the assessment are presented in the table below.

Table 4. Statistical Test Results

No	Student ID	Pretest	Posttest	Difference
1	M 1	50	50	0
2	M 2	50	50	0
3	M 3	40	40	0
4	M 4	50	45	-5
5	M 5	50	45	-5

6	M 6	50	50	0
7	M 7	50	50	0
8	M 8	45	50	+5
9	M 9	45	50	+5
10	M 10	50	50	0
11	M 11	50	50	0
12	M 12	45	50	+5
13	M 13	45	45	0
14	M 14	45	50	+5
15	M 15	50	50	0
16	M 16	45	50	+5
17	M 17	45	45	0
18	M 18	50	50	0
19	M 19	50	50	0
20	M 20	50	50	0
21	M 21	35	50	+15
22	M 22	50	50	0
23	M 23	45	50	+5
	Average	46,52	48,91	+2.39

Discussion

Empirical evidence indicates that executing an *edupreneurship* framework grounded in local wisdom yields substantial advancements across students' intellectual (cognitive), emotional (affective), and practical skills (psychomotor domains). This outcome aligns with Contextual Teaching and Learning (CTL) tenets, which posit that academic efficacy is maximized when learners bridge theoretical knowledge with tangible socio-cultural environments. By embedding Torajan cultural values and regional economic potentials into the entrepreneurial curriculum, abstract concepts were effectively translated into viable, localized business prospects.

Culturally contextualized learning stimulated advanced cognitive mastery, enabling students to discern and exploit entrepreneurial avenues within their heritage. This dynamic substantiates Vygotsky's constructivist paradigm, emphasizing that knowledge acquisition is inherently mediated by social and cultural interactions. Moreover, contemporary literature

corroborates that merging heritage with entrepreneurial education fosters critical thinking, creativity, and opportunity recognition by elevating material relevance.

Affectively, there was a pronounced escalation in student motivation, proactive engagement, and entrepreneurial consciousness. Core communal values, namely *gotong royong* (mutual collaboration), civic duty, and a robust work ethic, became deeply ingrained during the pedagogical process. Such behavioral shifts resonate with Bandura's Social Cognitive Theory, which underscores the reciprocal determinism between environmental factors and behavioral modification. This mirrors prior research demonstrating that culturally infused entrepreneurship curricula reinforce entrepreneurial intent, self-efficacy, and community-oriented responsibility.

Psychomotor advancement was demonstrated through the students' proficiency in formulating business proposals, engineering product prototypes, and structuring marketing frameworks for indigenous goods, innovation was particularly evident in the digital packaging and promotion of traditional crafts and culinary arts. This hands-on competence validates Kolb's experience learning Theory, which positions concrete experience as central to skill acquisition. These insights reinforce existing consensus that project-based *edupreneurship* cultivates technical business acumen, innovative capacity, and market readiness.

Ultimately, this study confirms that incorporating indigenous wisdom into entrepreneurial pedagogy optimizes academic performance, instills ethical character, and builds practical capabilities. In line with previous empirical data, this localized approach bridges the gap between classroom learning and sustainable economic development. Consequently, this model serves as a strategic pedagogical tool to produce career-ready graduates capable of driving innovation rooted in local heritage.

CONCLUSION

This research explored the efficacy of embedding indigenous Torajan values into an *edupreneurship* pedagogical framework to enhance the entrepreneurial competencies of English Education students at UKI Toraja. Empirical evidence from the assessment data revealed a statistically meaningful upward shift in student achievement post-intervention, confirming that a culturally responsive curriculum strongly reinforces entrepreneurial literacy. Rather than merely boosting theoretical comprehension, this instructional approach prompted learners to actively map out and transform local cultural assets into viable business initiatives. The unique academic contribution of this work centers on this deliberate fusion of traditional Torajan heritage with *edupreneurship* within teacher training, effectively establishing a contextual educational model that simultaneously champions entrepreneurial readiness and heritage preservation.

Broadly speaking, these insights expand the current literature on higher education entrepreneurship by demonstrating how culturally anchored methodologies can cultivate robust business skills. From a practical standpoint, the study offers a viable alternative curriculum blueprint for higher education institutions aiming to foster graduate enterprise while revitalizing regional socioeconomic assets. However, certain methodological parameters must be acknowledged: the reliance on a one-group pretest-posttest architecture, a modest participant cohort, and its execution within one university necessarily constrain the

immediate generalizability of the outcomes. To build upon these insights, future scholarly efforts should adopt quasi-experimental frameworks utilizing broader, multi-institutional samples. Longitudinal research is likewise encouraged to investigate the enduring impacts of local wisdom-infused training on long-term entrepreneurial intent, digital business agility, market sustainability, and post-graduation career trajectories.

ACKNOWLEDGMENT

The authors express their deepest gratitude to Almighty God for His abundant grace, wisdom, and guidance throughout the completion of this study. The authors also sincerely thank the leadership of UKI Toraja, the lecturers and experts who provided valuable feedback during the research process, and the students of the English Education Study Program who willingly participated in this study. Appreciation is further extended to all individuals and institutions whose support and cooperation contributed to the successful completion of this research.

REFERENCE

- Anubhav, K., Dwivedi, A. K., & Aashish, K. (2024). Entrepreneurship education in higher education (2002-2022): A technology-empowered systematic literature review. *International Journal of Management Education*, 22(3), 100993. <https://doi.org/10.1016/j.ijme.2024.100993>
- Arjaya, I. B. A., Suastra, I. W., Redhana, I. W., & Sudiatmika, A. A. I. A. R. (2024). Global trends in local wisdom integration in education: A bibliometric mapping analysis from 2020 to 2024. *International Journal of Learning, Teaching and Educational Research*, 23(7), 130–152. <https://doi.org/10.26803/ijlter.23.7.7>
- Ayandibu, E. O. (2025). Integrating indigenous knowledge systems into entrepreneurship education: A South African perspective. *International Journal of Research in Business and Social Science*, 14(6), 380-392. <https://doi.org/10.20525/ijrbs.v14i6.4263>
- Bierer, S. B., Dallaghan, G. B., Borges, N. J., Brondfield, S., Fung, C. C., Huggett, K. N., Teal, C. R., Thammasitboon, S., & Colbert, C. Y. (2025). Moving beyond Simplistic research design in health professions education: What a one-group pretest-posttest design will not prove. *MedEdPORTAL*, 21, 11476. https://doi.org/10.15766/mep_2374-8265.11476
- Brondizio, E. S., Aumeeruddy-Thomas, Y., Bates, P., et al. (2021). Locally based, regionally manifested, and globally relevant: Indigenous and local knowledge, values, and practices for nature. *Annual Review of Environment and Resources*, 46, 481-509. <https://doi.org/10.1146/annurev-environ-012220-012127>
- Chen, L., Ifenthaler, D., & Yau, J. Y.-K. (2021). Online and blended entrepreneurship education: A systematic review of applied educational technologies. *Entrepreneurship Education*, 4, 191-232. <https://doi.org/10.1007/s41959-021-00047-7>
- Cui, J., Sun, J., & Bell, R. (2021). The impact of entrepreneurship education on entrepreneurial intention: A meta-analytic review. *The International Journal of Management Education*, 19(1), 100420. <https://doi.org/10.1016/j.ijme.2020.100420>

- Gómez, C. V. G. (2024). Teaching entrepreneurship in higher education: The application of active-based learning activities to environmental protection. *Thinking Skills and Creativity*, 52, 101502. <https://doi.org/10.1016/j.tsc.2024.101502>
- Hägg, G., & Gabrielsson, J. (2021). A systematic literature review of the evolution of pedagogy in entrepreneurial education research. *International Journal of Entrepreneurial Behavior and Research*, 27(2), 514-535. <https://doi.org/10.1108/IJEBR-04-2018-0272>
- Jannah, M. Arintoko, & Naufalin, L. R. (2023). The effect of the method of edupreneurship practice-based business center and school environment on interest in entrepreneurship. *International Journal of Entrepreneurial Knowledge*, 11(1), 51-71. <https://doi.org/10.37335/ijek.v11i1.185>
- Johnson, A. T., & Mabh, M. F. (2024). Disobedience, (dis)embodied knowledge management, and decolonization: Higher education in The Gambia. *Higher Education*, 88, 1909-1926. <https://doi.org/10.1007/s10734-024-01192-3>
- Lackeus, M. (2020). Comparing the impact of three different experiential approaches to entrepreneurship in education. *International Journal of Entrepreneurial Behavior and Research*, 26(5), 937-971. <https://doi.org/10.1108/IJEBR-04-2018-0236>
- Liszt-Rohlf, V., Büker, R., & Kamsker, S. (2025). Entrepreneurship education at all levels of education: A systematic research question-guided literature review on target group-appropriate entrepreneurship education. *Entrepreneurship Education and Pedagogy*, 9(1), 92-131. <https://doi.org/10.1177/25151274251323609>
- Maragh, D. (2024). A systematic literature review of the impact of extracurricular entrepreneurship education. *Entrepreneurship Education and Pedagogy*, 8(1), 1-28. <https://doi.org/10.1177/25151274241247829>
- Martinez-Gregorio, S., Badenes-Ribera, L., & Oliver, A. (2021). Effect of entrepreneurship education on entrepreneurship intention and related outcomes in educational contexts: A meta-analysis. *The International Journal of Management Education*, 19(3), 100545. <https://doi.org/10.1016/j.ijme.2021.100545>
- Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2021). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning and Education*, 20(2), 188-212. <https://doi.org/10.5465/amle.2015.0026>
- Ndou, V. (2021). Social entrepreneurship education: A combination of knowledge exploitation and exploration processes. *Administrative Sciences*, 11(4), 112. <https://doi.org/10.3390/admsci11040112>
- Ningsih, D., Pahrudin, A., Koderi, & Fauzan, A. (2025). Mapping of local wisdom-based education management studies in the last decade: A bibliometric analysis. *International Journal of Learning, Teaching and Educational Research*, 25(1), 310-334. <https://ijlter.org/index.php/ijlter/article/view/15577>
- Onwuegbuzie, H. N., Mafimisebi, O. P., & Orighoyegha, E. (2025). Indigenous knowledge and entrepreneurship as a strategy for sustainable development in Africa. *Journal of Entrepreneurship in Emerging Economies*, 14(5), 1-18. <https://www.emerald.com/insight/publication/issn/2053-4604>
- Rodrigues, A. L. (2023). Entrepreneurship education pedagogical approaches in higher education. *Education Sciences*, 13(9), 940. <https://doi.org/10.3390/educsci13090940>

- Ratten, V., Dana, L. P., & Ramadani, V. (2023). Entrepreneurship and cultural values: Future Research directions. *Journal of Enterprising Communities*, 17(2), 245-259.
- Ratten, V., & Usmanij, P. (2021). Entrepreneurship education: Time for a change in research direction? *The International Journal of Management Education*, 19(1), 100367. <https://doi.org/10.1016/j.ijme.2020.100367>
- Sa, M. J., & Serpa, S. (2020). Entrepreneurship education programmes: A systematic literature review. *Education Sciences*, 10(12), 375.
- Skvarc, D. R., & Fuller-Tyszkewics, M. (2024). Calculating repeated-measures meta-analytic effects for continuous outcomes: A tutorial on pretest-posttest-controlled designs. *Advances in Methods and Practices in Psychological Science*, 7(1), 1-18. <https://doi.org/10.1177/25152459231217238>
- Tamtik, M. (2023). Indigenous innovation and organizational change towards equitable higher education systems: The Canadian experience. *AlterNative: An International Journal of Indigenous Peoples*, 19(2), 230-242.
- Tiberius, V., Weyland, M., & Schwarzer, H. (2023). Entrepreneurship education or entrepreneurship training? A bibliometric analysis. *Journal of Further and Higher Education*, 47(1), 134-149. <https://www.tandfonline.com/doi/full/10.1080/0309877X.2022.2100692>
- Weise, C., Alvarez, I. M., & Sarapura, N. (2021). Designing a deep intercultural curriculum in higher education: Co-constructing knowledge with Indigenous women. *AlterNative: An International Journal of Indigenous Peoples*, 17(2), 241-252. <https://journals.sagepub.com/home/aln>
- Wong, H. Y. H., & Chan, C. K. Y. (2023). Assessing engineering students' perspectives of entrepreneurship education within higher education. *Assessment and Evaluation in Higher Education*, 48(6), 847-859. <https://doi.org/10.1080/02602938.2022.2137103>
- Yousaf, U., Ali, S. A., Ahmed, M., Usman, B., & Sameer, I. (2021). From entrepreneurial education to entrepreneurial intention: A sequential mediation of self-efficacy and entrepreneurial attitude. *International Journal of Innovation Science*, 13(3), 364-380. <https://doi.org/10.1108/IJIS-09-2020-0133>
- Zollet, S., Monsen, E., Chen, W. D., & Barber, D. (2024). Rural entrepreneurship education. *Entrepreneurship Education and Pedagogy*, 7(3), 253-263. <https://doi.org/10.1177/25151274241235458>