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Evaluating Strategies to Increase Students' Accountability in Entrepreneurship Education

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Abstract

Student accountability has become a key concern in higher education, particularly as learning environments evolve towards more student-centered, collaborative, and practice-based approaches. Traditional models of accountability, often tied to instructor-led assessments, are increasingly being complemented by strategies that encourage students to take ownership of their learning. This systematic literature review explores a range of pedagogical approaches that enhance student accountability. In entrepreneurship education there has been a range of different strategies applied. Group projects foster collective responsibility, ensuring that students contribute meaningfully to shared objectives. Peer review – whether anonymous or open – develops critical thinking and evaluative skills, strengthening student engagement with both their own and others' work. Team-based assessments reinforce accountability by linking individual performance to group success, while public presentations and exhibitions introduce external accountability, motivating students to meet professional and academic standards. Class-wide grade distribution provides transparency and encourages self-improvement through comparative performance insights. Additionally, self-regulated learning—encompassing goal setting, progress tracking, and reflective practices—supports intrinsic accountability by fostering independent learning habits. Transparent evaluation criteria further strengthen accountability by ensuring clarity in expectations. The results of the literature review are further enhanced with an example from the innovative educational approach of the Finnish Team Academy (Tiimiakatemia), highlighting the relevance of team coaching, entrepreneurial team projects, and real-world learning environments. Those structures required students to take ownership of their academic and professional development. As higher education institutions increasingly adopt experiential and collaborative learning models, embedding accountability-focused strategies into curricular design can enhance student engagement, performance, and long-term professional competence.

Keywords: *student accountability, team learning, experiential learning, peer review, self-regulated learning, assessment strategies, Team Academy*

1. Introduction

The shift from traditional instructor-led models to student-centred, experiential learning in entrepreneurship education presents challenges in ensuring accountability. Without clear structures, students may struggle with ownership, participation, and self-motivation. This paper explores strategies that reinforce student accountability and examines their effectiveness in entrepreneurship education.

In recent years, higher education has seen a significant shift towards more student-centred learning environments. This shift is particularly evident in entrepreneurship education, where experiential learning and real-world applications are emphasized. However, this transition has brought about challenges in maintaining student accountability. Traditional models of accountability, which rely heavily on instructor-led assessments, are no longer sufficient in these dynamic and collaborative learning settings.

The primary challenge in student-centred learning environments is ensuring that students take ownership of their learning. Without clear accountability structures, students may struggle with participation, motivation, and overall engagement. [30] This paper aims to explore various strategies that can enhance student accountability in entrepreneurship education, thereby improving student outcomes and professional readiness.

2. Literature Review

Accountability in education has been widely studied, with research highlighting self-regulation, peer evaluation, and collaborative learning as key drivers of responsibility [1]. Entrepreneurial education frameworks emphasize experiential learning, where real-world applications enhance student engagement and self-directed learning [2].
The Finnish Team Academy model exemplifies how accountability can be embedded in project-based education. Additional sources from recent research further expand on these strategies and their impact on student learning environments [3-8]. Research has also explored how accountability measures influence student engagement, motivation, and overall performance [9-10].

2.1 Self-Regulation and Accountability

Self-regulation is a critical component of student accountability. Research indicates that students who engage in self-regulated learning are more likely to take ownership of their educational outcomes. Self-regulation involves goal setting, self-monitoring, and reflective practices, all of which contribute to a sense of personal responsibility [1].

2.2 Peer Evaluation and Collaborative Learning

Peer evaluation and collaborative learning are also essential in fostering accountability. Peer review processes encourage students to critically evaluate each other's work, which not only enhances their understanding of the subject matter but also promotes a sense of responsibility towards their peers [2]. Collaborative learning environments, such as group projects and team-based assessments, further reinforce this sense of collective accountability [3].

2.3 Experiential Learning in Entrepreneurship Education

Entrepreneurship education often relies on experiential learning, where students engage in real-world projects and entrepreneurial activities. This hands-on approach not only enhances learning outcomes but also instils a sense of accountability as students are required to apply their knowledge in practical settings [4]. The Finnish Team Academy model is a prime example of how experiential learning can be effectively integrated into entrepreneurship education to promote accountability [5].

3. Methodology

This study employs a systematic literature review, analysing peer-reviewed articles in entrepreneurship education. Additionally, insights from the Finnish Team Academy model provide practical evidence on accountability-enhancing strategies.

3.1 Research Design

The methodology of the literature review was guided by the Preferred Reporting Items for Systematic Reviews (PRISMA). Adhering to this protocol the criteria for article selection, the research strategy employed and the methodology for data extraction and analysis are described in detail. This paper's aim is to explore following research questions (RQ):

1. What are the most frequently mentioned tools to increase students' accountability in entrepreneurship education?
2. Which methods are used in the students' assessment?
3. Which pedagogical approaches utilised in the increasement of students' accountability amongst entrepreneurship/entrepreneur students in higher education (HE)?

3.2 Data Collection and Analysis

The selection of articles for inclusion in the systematic review adhered to the following established criteria.
Information sources

- Database: Google Scholar was selected as primary database because of the accessibility and for a diverse range of publications for exploratory research.

- Search period: our search was restricted to articles from 2024 and 2025 only. This tight period was chosen because we wanted to discover the latest trends in entrepreneurship/entrepreneur education.

Search strategy

- Terms: to gather the eligible studies, we used the equation “entrepreneurship AND education OR entrepreneurial AND education AND increase OR develop AND students AND accountability AND higher AND education OR university*”

Eligibility criteria

- Inclusion criteria: peer-reviewed articles, empirical studies, English language publications, student-focused approach, higher citation than 20
- Exclusion criteria: non-peer-reviewed sources, literature reviews, theoretical research only, historical research, articles focused not on the higher education, publications not in English language, teacher-centred approach, lower citation than 20 (incl.)

The review process consisted of two steps. In the first step we identified 43 articles. In the second phase after reviewing the full-text articles we removed 17 papers because those didn’t fit fully with the eligibility criteria. Therefore, the process resulted in 26 articles being selected.

4. Results and Findings

4.1 Group Projects

Group projects promote responsibility through shared goals [11]. Collaborative projects improve engagement and performance while fostering social accountability [12]. Studies indicate that well-structured group work increases motivation and encourages peer learning [13]. However, challenges such as unequal participation and free-riding behaviours have been noted, emphasising the importance of clear role distribution and accountability mechanisms [14]. Digital collaboration tools have been found to enhance transparency in teamwork [15].

4.1.1 Benefits of Group Projects

Group projects are a common strategy in entrepreneurship education to foster accountability. They promote collective responsibility as students work towards shared goals. Research indicates that collaborative projects improve student engagement and performance, as they encourage active participation and peer learning [11]. Additionally, group projects help develop essential skills such as communication, teamwork, and problem-solving [12].

4.1.2 Challenges and Solutions

Despite the benefits, group projects can present challenges, such as unequal participation and free-riding behaviours. To address these issues, it is crucial to establish clear role distribution and accountability mechanisms. Digital collaboration tools can also enhance transparency and ensure that all group members contribute meaningfully to the project [13].

4.2 Peer Review

Peer review encourages critical thinking and engagement [16]. Structured peer assessments contribute to better learning outcomes and skill development [17]. Research suggests that peer assessment fosters a deeper understanding of course material, particularly when feedback is well-articulated and constructive [18]. However, concerns about bias and fairness in evaluations remain [19]. Implementing anonymous peer reviews and rubric-based assessment criteria can mitigate these concerns [20].

4.2.1 Benefits of Peer Review

Peer review is an effective strategy to enhance student accountability. It encourages critical thinking and engagement, as students are required to evaluate their peers' work. Structured peer assessments contribute to better learning outcomes and skill development, as they promote a deeper understanding of the course material [16].

4.2.2 Challenges and Solutions

One of the main challenges of peer review is the potential for bias and unfair evaluations. To mitigate these concerns, it is essential to implement anonymous peer reviews and use rubric-based assessment criteria. This approach ensures that feedback is objective and constructive, thereby enhancing the overall effectiveness of peer assessments [17].

4.3 Team-Based Assessments

Team-based assessments link personal contributions to group outcomes. Digital tools help track individual contributions and provide real-time feedback, reinforcing accountability [21]. Studies show that team-based evaluations create a sense of collective responsibility while ensuring individual performance is recognized [22]. Moreover, introducing peer-assessed contributions within team evaluations enhances fairness and participation levels [23].

4.3.1 Benefits of Team-Based Assessments

Team-based assessments are another strategy to promote accountability in entrepreneurship education. They link personal contributions to group outcomes, ensuring that individual performance is recognized. Digital tools can help track individual contributions and provide real-time feedback, reinforcing accountability [21].

4.3.2 Challenges and Solutions

While team-based assessments promote collective responsibility, they can also present challenges, such as unequal participation and free-riding behaviours. To address these issues, it is essential to introduce peer-assessed contributions within team evaluations. This approach enhances fairness and ensures that all team members are held accountable for their contributions [22].

4.4 Public Presentations

Public presentations establish external accountability. Presenting findings to external stakeholders fosters professionalism and preparedness [24]. Research indicates that students perform better when their work is subject to public scrutiny, leading to improved communication and confidence [25]. Incorporating industry professionals in the evaluation process enhances authenticity and learning relevance [26].

4.4.1 Benefits of Public Presentations

Public presentations are an effective way to establish external accountability. Presenting findings to external stakeholders fosters professionalism and preparedness, as students are required to communicate their work clearly and confidently. Research indicates that students perform better when their work is subject to public scrutiny, leading to improved communication and confidence [24].

4.4.2 Challenges and Solutions

One of the main challenges of public presentations is the potential for anxiety and stress among students. To address this issue, it is essential to provide adequate support and preparation. Incorporating industry professionals in the evaluation process can also enhance the authenticity and relevance of the presentations, thereby improving student outcomes [25].

4.5 Self-Regulated Learning

Self-regulated learning develops intrinsic motivation and ownership [27]. AI-driven systems can support self-monitoring and feedback loops, allowing students to track their progress effectively [28]. Research highlights the role of goal setting and reflection in fostering long-term accountability [29]. However, the effectiveness of self-regulation depends on individual commitment and prior learning habits [23].

4.5.1 Benefits of Self-Regulated Learning

Self-regulated learning is a powerful strategy to enhance student accountability. It involves students taking control of their own learning processes through goal setting, self-monitoring, and reflective practices. This approach fosters intrinsic motivation and ownership, as students are actively engaged in their educational journey [27]. AI-driven systems can further support self-regulated learning by providing real-time feedback and progress tracking, allowing students to monitor their achievements and areas for improvement [28].

4.5.2 Challenges and Solutions

The effectiveness of self-regulated learning depends on individual commitment and prior learning habits. Some students may struggle with self-regulation due to a lack of experience or motivation. To address these challenges, educators can provide structured guidance and support, such as setting clear goals and providing regular feedback. Additionally, integrating self-regulated learning practices into the curriculum can help students develop these skills over time [29].

4.6 Transparent Evaluation Criteria

Transparent evaluation criteria enhance clarity and fairness. Clearly defined rubrics mitigate bias and set clear expectations [24]. Studies demonstrate that students who receive explicit grading criteria feel more accountable and engaged [25]. Instructors who provide clear performance expectations facilitate improved student confidence and learning outcomes [26].

4.6.1 Benefits of Transparent Evaluation Criteria

Transparent evaluation criteria are essential for fostering student accountability. Clearly defined rubrics and grading criteria provide students with a clear understanding of what is expected of them, reducing ambiguity and potential bias in assessments. Research indicates that students who receive explicit grading criteria are more likely to feel accountable and engaged in their learning [24].

4.6.2 Challenges and Solutions

One of the main challenges of implementing transparent evaluation criteria is ensuring that they are consistently applied across different courses and instructors. To address this issue, institutions can develop standardized rubrics and assessment guidelines that are used uniformly. Additionally, providing training for instructors on how to effectively use these criteria can enhance their implementation and effectiveness [25].

5. Discussion

Embedding accountability mechanisms in entrepreneurship education enhances student engagement and professional readiness. While peer review and self-regulated learning are promising, challenges include subjective evaluations and varying student commitment levels. Research suggests that digital tools can support accountability through real-time tracking and feedback systems [27]. Furthermore, studies indicate that balancing autonomy with structured accountability frameworks leads to higher academic performance and student satisfaction [28]. Ethical considerations of AI in accountability measures also require further exploration [29]. Future research could examine how artificial intelligence (AI) and data-driven assessments contribute to accountability in education.

Accountability mechanisms play a crucial role in enhancing student engagement. When students are held accountable for their learning, they are more likely to participate actively and take ownership of their educational outcomes. Strategies such as peer review, self-regulated learning, and transparent evaluation criteria can significantly improve student engagement and motivation [27].

Balancing autonomy with structured accountability frameworks is essential for achieving optimal student outcomes. While autonomy allows students to take control of their learning, structured frameworks provide the necessary guidance and support to ensure that they stay on track. Research indicates that this balance leads to higher academic performance and student satisfaction [28].

The integration of AI in accountability measures presents ethical considerations that require further exploration. AI-driven systems can enhance accountability through real-time tracking and feedback, but they also raise concerns about privacy, bias, and fairness. Future research should examine these

ethical implications and develop guidelines to ensure that AI is used responsibly in educational settings [29].

6. Conclusion and Implications

By integrating accountability-focused strategies, educators can create more engaging and effective learning environments. The Finnish Team Academy model provides a practical example of how accountability can be built into entrepreneurial education. Future research should examine longitudinal impacts and the role of digital tools in enhancing accountability practices.

6.1 Summary of Findings

This paper has explored various strategies to enhance student accountability in entrepreneurship education, including group projects, peer review, team-based assessments, public presentations, self-regulated learning, and transparent evaluation criteria. These strategies have been shown to improve student engagement, performance, and long-term professional competence.

6.2 Implications for Practice

Educators can use the findings from this paper to develop and implement accountability-focused strategies in their curricula. By fostering a sense of responsibility and ownership among students, these strategies can enhance learning outcomes and prepare students for professional success.

6.3 Future Research Directions

Future research should examine the longitudinal impacts of accountability-focused strategies and explore the role of digital tools, such as AI, in enhancing accountability practices. Additionally, ethical considerations related to the use of AI in education should be further investigated to ensure responsible implementation.

REFERENCES

[1] Darling-Hammond, L., Bae, S., Cook-Harvey, C.M., Lam, L., Mercer, C., Podolsky, A., & Stosich, E.L. (2016). Pathways to new accountability through the Every Student Succeeds Act. *Journal Name*, 47(1), 3-16.
[2] Bosse, D.A., Harrison, J.S., Pollack, J.M., & Schrempf-Stirling, J. (2023). Entrepreneurial opportunities as responsibility. *Entrepreneurship Theory and Practice*, 47(1), 3-16.
[3] Rönn, C., & Pettersson, D. (2023). Swedish students' everyday school life and teachers' assessment dilemmas: peer strategies for ameliorating schoolwork for assessment. *Educational Assessment, Evaluation and Accountability*, pp.1-30.
[4] Pan, S., Hafez, B., Iskandar, A., & Ming, Z. (2024). Integrating constructivist principles in an adaptive hybrid learning system for developing social entrepreneurship education among college students. *Learning and Motivation*, 87, 102023.
[5] Makuya, V., & Changalima, I. A. (2024). Unveiling the role of entrepreneurship education on green entrepreneurial intentions among business students: gender as a moderator. *Cogent Education*, 11(1), 2334585.
[6] Overwien, A., Jahnke, L., & Leker, J. (2024). Can entrepreneurship education activities promote students' entrepreneurial intention?. *The International Journal of Management Education*, 22(1), 100928.
[7] Mu, Q., & Zhao, Y. (2024). Transforming entrepreneurship education in the age of artificial intelligence. *Resources Data Journal*, 3, 2-20.
[8] Tam, H. L., Chan, A. Y. F., Fung, T. T. O., & Isangha, S. O. (2024). The mediating effect of psychological strengths and resilience on enhancing youth employability through social entrepreneurship education and training. *Children and Youth Services Review*, 156, 107325.
[9] Amani, D., Ismail, I. J., Makona, A., Changalima, I. A., & Kazungu, I. (2024). Extending the mediation role of entrepreneurial self-efficacy on enhancing students' entrepreneurial intentions: A moderated mediation model. *The International Journal of Management Education*, 22(1), 100915.

[10] Rosário, A. T., & Raimundo, R. (2024). Sustainable entrepreneurship education: a systematic bibliometric literature review. *Sustainability*, 16(2), 784.
[11] Hashmi, N., & Bal, A. S. (2024). Generative AI in higher education and beyond. *Business Horizons*, 67(5), 607-614.
[12] Pischetola, M., & Martins, L. de S. e S. (2021). Teaching Social Entrepreneurship in Higher Education: Active Pedagogy in a Deweyan Perspective. *Journal of Social Entrepreneurship*, 15(2), 543–564. https://doi.org/10.1080/19420676.2021.1976816
[13] Liguori, E. W., Muldoon, J., Ogundana, O. M., Lee, Y., & Wilson, G. A. (2024). Charting the future of entrepreneurship: a roadmap for interdisciplinary research and societal impact. *Cogent Business & Management*, 11(1). https://doi.org/10.1080/23311975.2024.2314218
[14] Nguyen, A., Kremantzis, M., Essien, A., Petrounias, I., & Hosseini, S. (2024). Enhancing student engagement through Artificial Intelligence (AI): Understanding the basics, opportunities, and challenges. *Journal of University Teaching and Learning Practice*, 21(6), 1–13. https://search.informit.org/doi/10.3316/informit.T202409290000310119969401 1
[15] Navío-Marco, J., Mendieta-Aragón, A., de Tejada Muñoz, V. F., & Ruiz, M. J. B. C. (2024). Driving students' engagement and satisfaction in blended and online learning universities: Use of learner-generated media in business management subjects. *The International Journal of Management Education*, 22(2), 100963.
[16] Mohzana, M., Arifin, M., Pranawukir, I., Mahardhani, A. J., & Hariyadi, A. (2024). Quality assurance system in improving the quality of education in schools. *Mudir: Jurnal Manajemen Pendidikan*, 6(1).
[17] Adib, H. (2024). Experiential learning in higher education: Assessing the role of business simulations in shaping student attitudes towards sustainability. *The International Journal of Management Education*, 22(2), 100968.
[18] Khreisat, M. N., Khilani, D., Rusho, M. A., Karkkulainen, E. A., Tabuena, A. C., & Uberas, A. D. (2024). Ethical implications of AI integration in educational decision making: Systematic review. *Educational Administration: Theory and Practice*, 30(5), 8521-8527.
[19] Tran, V. H., Vu, T. N., Pham, H. T., Nguyen, T. P. T., & Duong, C. D. (2024). Closing the entrepreneurial attitude-intention-behavior gap: The direct and moderating role of entrepreneurship education. *Journal of International Education in Business*, 17(1), 107-132.
[20] Wasim, J., Youssef, M. H., Christodoulou, I., & Reinhardt, R. (2023). The Path to Entrepreneurship: The Role of Social Networks in Driving Entrepreneurial Learning and Education. *Journal of Management Education*, 48(3), 459-493. https://doi.org/10.1177/10525629231219235 (Original work published 2024)
[21] Pepin, M., Tremblay, M., Audebrand, L. K., & Chassé, S. (2024). The responsible business model canvas: Designing and assessing a sustainable business modeling tool for students and start-up entrepreneurs. *International journal of sustainability in higher education*, 25(3), 514-538.
[22] Gao, Y., Wang, X., Lu, J., Chen, B., & Morrin, K. (2024). Entrepreneurial fear of failure among college students: A scoping review of literature from 2010 to 2023. *Heliyon*, 10(10).
[23] Olsen, T., & Hunnes, J. (2023). Improving students' learning—the role of formative feedback: experiences from a crash course for business students in academic writing. *Assessment & Evaluation in Higher Education*, 49(2), 129–141. https://doi.org/10.1080/02602938.2023.2187744
[24] Ripolles, M., & Blesa, A. (2024). The role of teaching methods and students' learning motivation in turning an environmental mindset into entrepreneurial actions. *The International Journal of Management Education*, 22(2), 100961.
[25] Crosina, E., Frey, E., Corbett, A., & Greenberg, D. (2024). From negative emotions to entrepreneurial mindset: A model of learning through experiential entrepreneurship education. *Academy of Management Learning & Education*, 23(1), 88-127.
[26] Listyaningsih, E., Mufahamah, E., Mukminin, A., Ibarra, F. P., Santos, Ma. R. H. M. D., & Quicho, R. F. (2023). Entrepreneurship education, entrepreneurship intentions, and entrepreneurship motivation on students' entrepreneurship interest in entrepreneurship among higher education students. *Power and Education*, 16(3), 297-313. https://doi.org/10.1177/17577438231217035 (Original work published 2024)
[27] Tiberius, V., & Weyland, M. (2024). Enhancing higher entrepreneurship education: Insights from practitioners for curriculum improvement. *The International Journal of Management Education*, 22(2), 100981.

[28] Vecchiarini, M., Muldoon, J., Smith, D., & Boling, R. J. (2023). Experiential Learning in an Online Setting: How Entrepreneurship Education Changed During the COVID-19 Pandemic. *Entrepreneurship Education and Pedagogy*, 7(2), 190-217. https://doi.org/10.1177/25151274231179194 (Original work published 2024)
[29] Sitaridis, I., & Kitsios, F. (2024). Digital entrepreneurship and entrepreneurship education: a review of the literature. *International Journal of Entrepreneurial Behavior & Research*, 30(2/3), 277-304.
[30] Tasi, P., & Scheider, A.-C. (2021). Dimensions of Leadership: Team Academies as Systems. In E. Vettraino & B. Urzelai, Team Academy: Leadership and Teams (1st ed., pp. 113–125). Routledge. https://doi.org/10.4324/9781003163121-8