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AI-Based Brand Equity Management Training for Student Technopreneurs in Business Incubation Programs

Ayung Candra Padmasari* Universitas Pendidikan Indonesia, INDONESIA

Asep Ridwan Lubis Universitas Pendidikan Indonesia, INDONESIA

Muhammad Hasan Basari Universitas Pendidikan Indonesia, INDONESIA

Firdaus Aslamy Universitas Terbuka, INDONESIA

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Abstract

Background: The transformation of technopreneurship in higher education requires the integration of digital technologies and entrepreneurial competencies to prepare students for the digital economy. However, students often face limitations in brand equity management, artificial intelligence (AI) utilization, and practical business implementation.
Aims: This community service program aims to enhance students' technopreneurial capacity through AI-based brand equity management training within a business incubation program.
Methods: The activity involved 15 students divided into five business groups and was conducted from May 9 to August 31, 2025. The program adopted a Participatory Action Research (PAR) approach, consisting of training sessions, business mentoring, and practical activities in developing business plans and prototypes. To evaluate the effectiveness of the program, a pre-test and post-test design using a Likert-scale questionnaire was applied. The pre-test was conducted on May 9, 2025, and the post-test on August 31, 2025.
Results: The results showed that the average competency score increased from 62.4 (moderate category) to 81.7 (good category). Improvements were observed across key indicators, including digital literacy, brand equity strategy, collaboration with MSMEs, attitude and motivation, and time management. The program produced one independent student business and four business prototypes ready for incubation. In addition, participants demonstrated an improved ability to utilize AI tools for market analysis, digital marketing, and content creation.
Conclusion: AI-based training combined with mentoring can support the development of student technopreneurs and enhance their readiness for the digital economy.

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INTRODUCTION

The transformation of technopreneurship in higher education has become a strategic effort to prepare the younger generation for the challenges of the Industrial Revolution 4.0, which is characterized by the integration of digital technologies across various sectors (Shenkoya & Kim, 2023). In this context, students are not only required to possess academic competencies but also innovative and adaptive entrepreneurial skills to compete in a technology-driven economic ecosystem (Wahyuningsih et al., 2025). Furthermore, essential 21st-century competencies, such as critical thinking, collaboration, communication, and digital literacy, must be integrated into higher education learning processes (Biclesanu et al., 2023). The Indonesian University of Education (UPI) demonstrates strong potential in fostering student technopreneurship, as reflected in the increasing number of student initiatives in innovation-based entrepreneurship programs (Vidy et al., 2022). However, several challenges remain. Students' understanding of brand equity management and business diversification strategies is still limited, resulting in entrepreneurial ideas that often remain at the conceptual level and are not yet aligned with market needs (Rauf et al., 2024). In addition, the utilization of artificial intelligence (AI) as a strategic tool for market analysis, data processing, and

*** Corresponding author:**
Ayung Candra Padmasari, Universitas Pendidikan Indonesia, Indonesia. ✉ayungcandra@upi.edu

digital marketing is still not optimal due to limited technological literacy among students (Uriarte et al., 2025). Although higher education institutions have established entrepreneurship ecosystems through business incubators and development programs, these initiatives have not fully addressed the gap in students' practical skills, particularly in integrating AI and brand equity strategies into real business practices (Thottoli et al., 2024). Other challenges, such as limited time management skills and resistance to adopting new technologies, further hinder the development of student technopreneurship. Previous studies have shown that AI-based programs and mentoring activities can improve digital literacy, creativity, and entrepreneurial capacity, particularly when supported by collaboration and experiential learning approaches (Kim et al., 2025; Liang et al., 2025). Based on these conditions, there is a need for an integrated community service program that not only strengthens students' technical competencies but also provides practical experience through training and mentoring within an entrepreneurial ecosystem. Such programs are expected to bridge the gap between theoretical knowledge and real-world business implementation, while also supporting the development of sustainable and market-oriented student businesses. Therefore, this community service activity aims to enhance students' technopreneurial capacity through AI-based brand equity management training combined with mentoring within a business incubation program.

METHOD

The implementation of this community service program is grounded in the integration of digital technology and entrepreneurship training, which has been shown to enhance business competitiveness and innovation, particularly in the context of AI adoption (Almashawreh et al., 2024). This program employed a Participatory Action Research (PAR) approach, which emphasizes active collaboration among participants through the stages of planning, action, observation, and reflection. This approach enables the integration of theory and practice through participatory activities involving students, lecturers, and business and industry partners (Nhamo, 2012).

Figure 1. Participatory Action Research (PAR) Diagram.

Figure 1 illustrates the PAR cycle adopted in this program, showing the iterative process consisting of planning, action, observation, and reflection stages. These stages were continuously implemented to ensure that each activity was evaluated and improved throughout the program. The implementation of the PAR approach in this program is described in detail in Table 1, which outlines the stages, key indicators, and activities carried out during the program.

Table 1. Detailed Activity by PAR Stage

PAR stages	Key Indicators	Details of Activities Carried Out
Planning	a. Identification of needs b. Problem analysis c. Preparation of action plan	a. FGDs and survey of students' and MSMEs' needs b. Preparation of training modules on AI, brand equity, business diversification

PAR stages	Key Indicators	Details of Activities Carried Out
		c. Coordination with business incubators & DUDI partners
Action	a. Program implementation b. Active participation c. Knowledge transfer	a. Digital literacy & AI workshop b. Mentoring in preparing business plans & prototypes c. Collaborative practice with MSMEs d. Internal student incubation
Observation (Evaluation)	a. Monitoring achievements b. Collecting data on business ideas c. Impact analysis	a. Pre-post program questionnaire b. In-depth interviews with students c. Observation of prototype results of business ideas and mentoring activities
Reflection	a. Continuous improvement b. Dissemination of results c. Strengthening program sustainability	a. Preparation of student business roadmap b. Facilitation of partnerships with DUDI & incubators c. Submission to start-up competitions & grants; Publication of results in journals

The participants of this program consisted of 15 students, divided into five business groups, who were selected based on their basic competencies in digital technology, multimedia, and business management. The program was conducted from May 9 to August 31, 2025, consisting of a series of training sessions and mentoring activities. The implementation of the program included several main activities: (1) training on AI-based brand equity management, (2) mentoring in developing business plans and prototypes, and (3) practical activities involving collaboration with MSME partners. These activities were carried out through workshops, guided practice, and continuous assistance during the incubation process. To evaluate the effectiveness of the program, a pre-test and post-test design was applied using a Likert-scale questionnaire. The pre-test was conducted at the beginning of the program on May 9, 2025, and the post-test was conducted at the end of the program on August 31, 2025. The training sessions included key components such as brand building strategies and brand equity development, where students were guided to formulate effective branding strategies for their business ideas. In addition, students were introduced to the use of ChatGPT for content creation based on niche identification and call-to-action (CTA) strategies. The program also included mentoring sessions focused on developing strategic prompts to generate relevant marketing content, followed by workshops and hands-on practice in creating AI-assisted marketing content for selected business ideas. The evaluation measured several indicators used in this study, which are defined as follows l.1 (Digital Literacy) refers to students' ability to utilize digital technologies, particularly AI tools, in data processing, analysis, and business communication; l.2 (Brand Equity Strategy) refers to students' understanding and application of brand positioning, differentiation, and value creation in business development; l.3 (Collaboration with MSMEs) refers to students' ability to engage and collaborate with MSME partners in identifying market needs and developing business solutions; l.4 (Attitude and Motivation) refers to students level of enthusiasm, initiative, and commitment in participating in training and mentoring activities; l.5 (Time Management) refers to students' ability to manage time effectively in completing tasks, attending mentoring sessions, and developing business outputs. The collected data were analyzed using descriptive statistics to compare the average scores between pre-test and post-test results. In addition, qualitative observations during mentoring activities were used to support the interpretation of the results, ensuring a more comprehensive understanding of the program outcomes.

RESULTS AND DISCUSSION

Results

The results of this community service program are presented in the form of competency measurements and practical outputs generated during the implementation of the training and mentoring activities. In more detail, the resulting outputs include: (1) an AI-based technopreneurship training module, (2) improved student capacity in digital literacy, and (3) the development of student business plans and prototypes.

1. Pre-Test Results.

The pre-test results indicate that students' initial competencies were generally in the moderate category, with an average score of 62.4. Among the groups, Business Group 3 showed the lowest initial performance, particularly in digital literacy and time management, while Business Group 1 demonstrated relatively higher baseline competencies.

Table 2. Pre-Test Results Before Training

Business Group	l.1	l.2	l.3	l.4	l.5	Average	Indicator
Business Group 1	68	66	67	65	66	66.4	Moderate
Business Group 2	60	62	61	63	60	61.2	Moderate
Business Group 3	55	57	56	58	54	56.0	Low
Business Group 4	62	64	63	65	62	63.2	Moderate
Business Group 5	60	61	62	63	60	61.2	Moderate
Average						62.4	Moderate

2. Post-Test Results.

After the implementation of AI-based training and mentoring activities, the post-test results showed an overall improvement in students' competencies. The average score increased to 81.7, which falls into the good category.

Table 3. Post-Test Results After Training.

Business Group	l.1	l.2	l.3	l.4	l.5	Average	Indicator
Business Group 1	95	94	95	93	95	93.0	Very Good
Business Group 2	82	84	80	83	85	82.2	Good
Business Group 3	70	69	72	68	71	70.0	Enough
Business Group 4	79	80	82	81	83	81.0	Good
Business Group 5	82	84	80	83	85	82.2	Good
Average						81.7	Good

3. Comparison of Pre-Test and Post-Test.

The comparison between pre-test and post-test results demonstrates a notable improvement of 19.3 points in the overall average score. Improvements were observed across all indicators, including digital literacy, brand equity strategy, collaboration with MSMEs, attitude and motivation, and time management. In terms of group performance, Business Group 1 achieved the highest post-test score, while Business Group 3, although improved, remained in the adequate category, indicating that differences in initial competency levels influenced the final outcomes. Table 4 presents a qualitative comparison of students' competencies before and after the implementation of the training and mentoring program. The comparison illustrates improvements across key indicators, reflecting changes in knowledge, skills, and behavioral aspects.

Table 4. Qualitative Comparison.

No	Indicator	Before	After
1	Digital literacy	1. The majority of students have basic skills in design	1. Significant improvements in the use of AI for market analysis, trend prediction, and digital

No	Indicator	Before	After
		applications and social media. 2. They do not yet understand how to use artificial intelligence (AI) to support business processes.	marketing. 2. Students are able to use simple AI applications to support business innovation.
2	Business Management and Brand Equity	1. Knowledge is limited to theory, with no concrete implementation in a business plan. 2. Difficulty designing branding and business diversification strategies.	1. Students were able to develop an applicable business plan using a SWOT analysis and business diversification strategy. 2. Students became aware of the importance of brand equity in building business competitiveness.
3	Collaboration with MSMEs	1. Not yet accustomed to interacting with MSMEs 2. Business ideas are still conceptual and not relevant to market needs.	1. Students established real collaboration between students and partner MSMEs. 2. Students produced at least three digital product/service prototypes relevant to local market needs.
4	Attitude and Motivation	1. Resistance to new technologies is quite high. 2. Confidence in developing a business is still low.	1. There is an increase in motivation and self-confidence in entrepreneurship. 2. Resistance to technology is reduced, replaced by a spirit of experimentation.
5	Time Management	Difficulty managing time between academic tasks and entrepreneurial activities.	Students are more disciplined in managing their time because of the structured mentoring and evaluation schedule.

The results indicate that the most notable improvements occurred in digital literacy and business application skills, particularly in the use of AI and the development of market-oriented business strategies.

4. Program Outputs.

The resulting outputs are not only in the form of increased knowledge, but also in the form of entrepreneurial practices that can be implemented in the student business ecosystem and community empowerment. In more detail, the outputs of this program include the development of one independent student business and four business prototypes that are ready for further incubation. In addition, students demonstrated the ability to utilize AI tools for market analysis, digital marketing, and content creation, reflecting the practical application of the training materials. The implementation of training and mentoring activities is illustrated in Figures 2 to 5.

Figure 2. Training Activities on AI-Based Brand Equity Management

The program was conducted from May 9 to August 31, 2025, through a series of structured training and mentoring activities designed to support students' technopreneurship development. The activities included:

(1) an initial workshop introducing brand equity management and the use of AI, in which students developed individual or group-based business plans;
(2) intensive training on the application of AI for brand equity analysis and digital marketing; and
(3) continuous mentoring and monitoring of students' business development throughout the program.

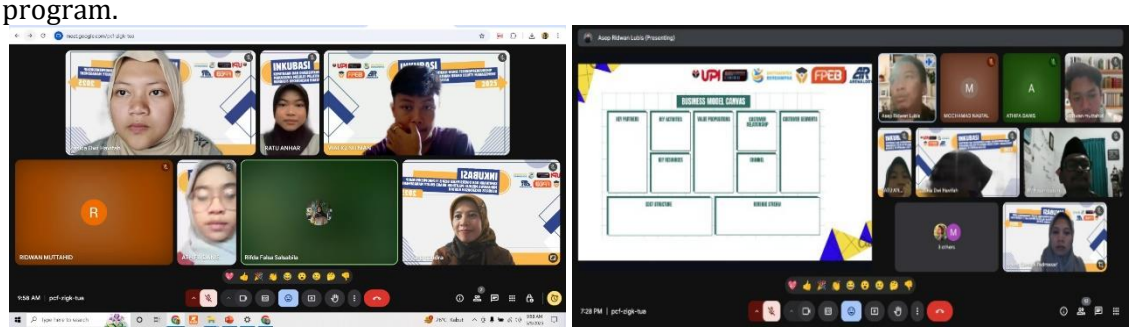

Figure 3. Students participating in training sessions on AI and brand equity

The participants of this program consisted of 15 students from Multimedia Education and Business Education programs, who were divided into five business groups. The participants were selected based on their basic competencies in digital technology, graphic design, multimedia, and business management. During the program, students were actively involved not only as participants but also as part of the implementation team, contributing to activities such as surveys and observations, focus group discussions (FGDs), digital content development, and the execution of real business projects.

Figure 4. Mentoring Activities with MSME Partners PT Arena Teknologi Indonesia

As part of the mentoring activities, Figure 4 presents sessions involving industry practitioners from PT Arena Teknologi Indonesia who provided guidance on AI-based brand equity management. Figure 5 presents documentation of student business prototypes developed during the implementation of the program. These prototypes represent tangible outputs generated through the training and mentoring activities, reflecting the application of technopreneurship concepts, including AI-based

branding, digital marketing strategies, and business model development. The figure illustrates how students translated theoretical knowledge into practical business solutions that are relevant to market needs.

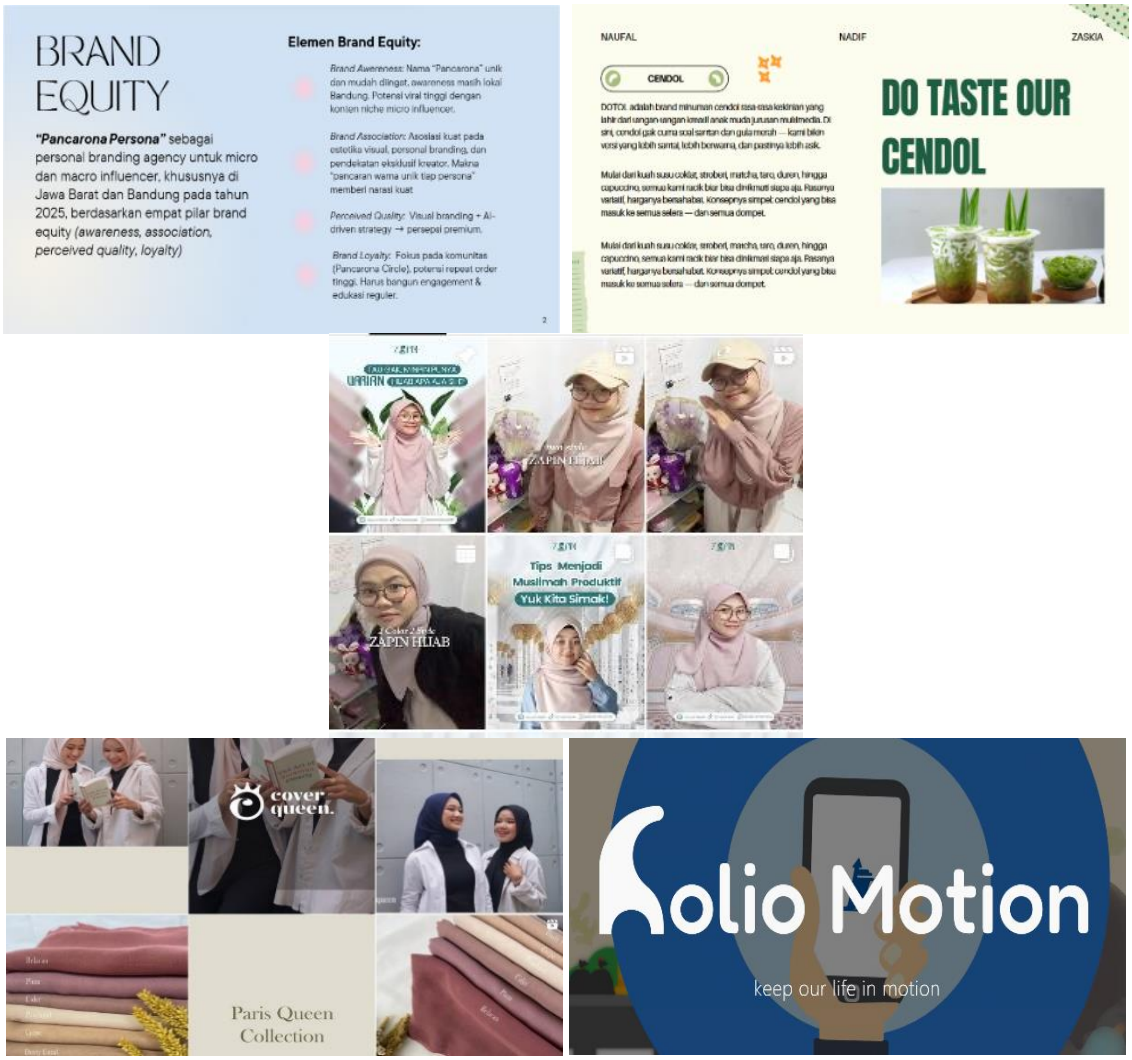

Figure 5. Student Business Prototypes

Discussion

The findings indicate that the implementation of AI-based training combined with mentoring activities has a positive impact on students' technopreneurial competencies. The increase from 62.4 to 81.7 reflects not only improved knowledge but also enhanced practical skills in applying AI for business purposes. This improvement can be attributed to several supporting factors. First, the integration of training and mentoring allowed students to directly apply theoretical concepts in real business contexts. The use of guided practice and continuous assistance enabled participants to better understand the application of AI tools in market analysis, branding strategies, and digital marketing. Second, collaboration with MSME partners provided real-world exposure, allowing students to align their business ideas with market needs. This contributed to improvements in both business understanding and collaboration skills. However, variations among groups were also observed. Business Group 3, which had the lowest initial score, showed improvement but remained in the adequate category, possibly due to lower initial digital literacy and limited engagement during mentoring sessions. In contrast, Business Group 1 achieved the highest performance, indicating stronger motivation, better time management, and more effective utilization of mentoring opportunities. In addition, non-technical factors such as motivation and time management played a crucial role in influencing outcomes. Students who actively participated in mentoring activities and managed their time effectively tended to achieve better results. This suggests that

technopreneurship development is influenced not only by technical competencies but also by behavioral and managerial factors. These findings support previous studies indicating that the integration of digital technology and mentoring can enhance entrepreneurial competencies and innovation. Therefore, AI-based training combined with mentoring within a business incubation program can be considered an effective approach to support student technopreneurs.

Implications

The findings of this study provide several important implications for the development of community service programs, particularly in the context of technopreneurship and digital transformation.

Practical Implications:

Practically, the results demonstrate that the integration of AI-based training with mentoring activities can effectively enhance students' competencies in applying digital technology to business development. The structured combination of training sessions, mentoring, and collaboration with MSME partners provides a replicable model for universities in developing student entrepreneurship programs. This approach can be adopted by higher education institutions to strengthen business incubation programs and improve the readiness of students to engage in the digital economy.

Academic Implications:

From an academic perspective, this study contributes to the literature on community service and technopreneurship by demonstrating the role of AI integration in enhancing entrepreneurial competencies. The findings also highlight the importance of combining training with mentoring as an effective approach in bridging the gap between theoretical knowledge and practical application. This study enriches the understanding of how participatory approaches, such as PAR, can be applied in community-based technopreneurship development.

Policy Implications:

In terms of policy, the results suggest that institutions and program managers should consider incorporating AI-based training and structured mentoring into entrepreneurship development programs. Strengthening collaboration with MSMEs and industry partners can also support the sustainability of student businesses and expand their market relevance. These findings can serve as a reference for designing more effective community service and incubation programs at the institutional level.

Research Contribution

This study makes a significant contribution to the development of technopreneurship education models in higher education by integrating artificial intelligence (AI) into student business incubation systems. Recent studies highlight that AI plays a transformative role in entrepreneurship by enhancing innovation capability, improving decision-making efficiency, and supporting digital business model development in dynamic environments (Chalmers et al., 2021). In addition, the digital transformation of entrepreneurial universities has been recognized as a key driver in building sustainable innovation ecosystems within higher education institutions (Secundo et al., 2021). Through the implementation of an Artificial Intelligence-Based Brand Equity Management training model, this research demonstrates that the integration of AI technologies with collaborative incubation frameworks can significantly strengthen students' capacity to develop digital innovation-based businesses. AI has been widely acknowledged for its role in enhancing marketing intelligence, customer analytics, and data-driven branding strategies that directly influence brand performance and competitiveness (Makhlooq & Mubarak, 2024). Furthermore, AI-driven systems contribute to value creation in branding through personalization, predictive analytics, and automated decision-making processes (Davenport & Ronanki, 2021). First, this study contributes to strengthening students' digital literacy and brand equity management competencies, which are critical challenges in contemporary entrepreneurship education (Thottoli et al., 2024; Zhou et al., 2024). Digital entrepreneurship education has been shown to improve students' innovation capability, creativity, and technological readiness in responding to digital economy demands (Rao et al., 2022). Moreover, AI-supported learning environments enhance critical thinking and data-driven decision-making

skills in entrepreneurial contexts (Holmes et al., 2022). Second, by incorporating an incubation-based collaboration approach with small and medium enterprises (SMEs), this research develops an experiential learning ecosystem in higher education. University-based incubation systems have been identified as an effective mechanism for fostering startup creation and entrepreneurial capability among students (Bergmann et al., 2022). In addition, experiential entrepreneurship learning strengthens students' problem-solving skills and adaptability in real business environments (Neumeyer & Santos, 2022). Third, this study contributes to the diversification of student technopreneurship business models through the development of AI-based digital products and services. Artificial intelligence accelerates business model innovation by enabling predictive market analysis, process automation, and scalable digital service creation (Van Giffen et al., 2022). This positions AI as a key enabler in shaping next-generation digital startups. Fourth, this research strengthens the theoretical understanding of the relationship between brand equity, AI adoption, and the success of student incubation programs. AI plays a critical role in enhancing customer experience and value co-creation in digital branding environments (Huang & Rust, 2021). Furthermore, AI integration in higher education supports the development of smart learning ecosystems that are adaptive, data-driven, and collaborative (Ifenthaler & Yau, 2023). Finally, the practical contribution of this study recommends the implementation of an AI-based incubation model integrated with industry collaboration, continuous mentoring, and digital innovation ecosystem strengthening in higher education institutions (Laksamana et al., 2024). Digital transformation in entrepreneurship education has been shown to improve students' readiness for participation in the global digital economy (Audretsch et al., 2021). Therefore, this model provides a scalable framework for developing sustainable, competitive, and future-oriented student startups.

Limitations

This research and community service program have several limitations that need to be considered for further study. First, the scope of implementation was limited to a group of technopreneur students within a single educational institution. Therefore, generalizing the results to a broader context, such as MSMEs or students in different regions, requires further study. Second, AI-based brand equity management training was relatively short-lived and did not include long-term monitoring of the sustainability of business practices and their impact on increasing profits and competitiveness. Third, the involvement of external business incubation partners was still limited, thus hindering broader collaboration with industry or professional practitioners. Furthermore, the program's success evaluation instruments primarily utilize quantitative approaches through pre- and post-tests, while qualitative assessments related to changes in participants' mindsets, creativity, and branding strategies have not been comprehensively measured. Other factors such as technological readiness, diverse entrepreneurial experience, and digital infrastructure support are also variables that could potentially influence training outcomes but have not been analyzed in depth. Understanding these limitations, further research is recommended to expand the scope of participants across institutions, extend the duration of intensive AI-based mentoring, increase the role of industry partners, and integrate mixed-methods evaluation to obtain a more comprehensive picture of the program's success and impact.

Suggestions

Subsequent training and mentoring can employ a longitudinal study design to measure the sustainability of the program's impact on business performance, profitability, brand identity development, and product quality after the training is implemented. Furthermore, developing a mixed-methods evaluation model is crucial to more comprehensively measure behavioral change, motivation, creativity, and digital capabilities through a combination of quantitative and qualitative data. Further research is expected to integrate new variables such as digital transformation readiness, entrepreneurial mindset, and AI literacy to enrich the conceptual framework and test its influence on the success of brand equity strategies. The role of broader external partnerships, including collaboration with industry, investors, and regional startup ecosystems, should also be explored to optimize participants' business scaling opportunities.

CONCLUSION

The Student Technopreneurship Partnership and Business Diversification Incubation Program through Artificial Intelligence-Based Brand Equity Management Training has been running well and has produced significant results. During the training process, students not only gained a theoretical understanding of the importance of brand equity management, but also gained practical experience in utilizing artificial intelligence technology to support business strategies. Through this program, students were able to develop skills. Overall, this activity succeeded in increasing digital literacy, entrepreneurial motivation, and students' readiness to face the challenges of the technology-based creative industry. Thus, this program is expected to be the first step in producing a generation of young technopreneurs who are adaptive, innovative, and ready to compete in the digital era.

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AUTHOR CONTRIBUTION STATEMENT

ACP: Development in the fields of immersive technology, multimedia, and the gaming industry, and experience in research and development of student technopreneurship. ARL: Served as a mentor in the development of entrepreneurship and business management, and assisted in the development of business plans, training modules, and student business simulations. MHB: Served as a mentor in the entrepreneurial process throughout the program. FA: Served as a mentor in the AI-based brand equity management.

AI DISCLOSURE STATEMENT

The authors used AI Discovery (formerly Scopus AI) during the preparation of this work to search for scientific work references as an overview of research theory from the last 5 years. After using this tool/service, the authors thoroughly reviewed and edited the content as needed and take full responsibility for the content of the publication.

The authors state that this research was conceived, researched, written, and edited without the assistance of artificial intelligence (AI) techniques.

CONFLICTS OF INTEREST

The authors of this study affirmatively confirm that there are no potential conflicts of interest, whether financial, institutional, or personal that could influence the conduct of this study, data analysis, preparation of the manuscript, or its publication.

REFERENCES

Almashawreh, R., Talukder, M., Charath, S. K., & Khan, M. I. (2024). AI Adoption in Jordanian SMEs: The Influence of Technological and Organizational Orientations. *Global Business Review*. https://doi.org/10.1177/09721509241250273

Audretsch, D. B., Lehmann, E. E., & Schenkenhofer, J. (2018). Internationalization strategies of hidden champions: lessons from Germany. *Multinational Business Review*, *26*(1), 2-24. https://doi.org/10.1108/MBR-01-2018-0006

Bergmann, H., Geissler, M., Hundt, C., & Grave, B. (2022). The climate for entrepreneurship at higher education institutions. *Research Policy, 47(4), 700-716.* https://doi.org/10.1016/j.respol.2018.01.018

Biclesanu, I., Savastano, M., Chinie, C., & Anagnoste, S. (2023). The Role of Business Students' Entrepreneurial Intention and Technology Preparedness in the Digital Age. *Administrative Sciences*, 13(8), 177. https://doi.org/10.3390/admsci13080177

Chalmers, D., MacKenzie, N. G., & Carter, S. (2021). Artificial Intelligence and Entrepreneurship: Implications for Venture Creation in the Fourth Industrial Revolution. *Entrepreneurship Theory and Practice, 45,* 1028-1053. https://doi.org/10.1177/1042258720934581

Davenport, T. H., & Ronanki, R. (2021). Artificial intelligence for the real world. *Harvard business review*, *96*(1), 108-116. Google Scholar

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in Education Promises and Implications for Teaching and Learning. (1st ed.).* Center for Curriculum Redesign: Boston, MA, USA. https://discovery.ucl.ac.uk/id/eprint/10139722

Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. *Journal of Service Research*, *21*(2), 155-172. https://doi.org/10.1177/1094670517752459

Huang, Y., Zhang, J., Xu, Y., Sun, S., Bu, Y., Li, S., & Chen, Y. (2024). College students' entrepreneurship policy, regional entrepreneurship spirit, and entrepreneurial decision-making. *Humanities and Social Sciences Communications*, *11*(1), 1-12. https://doi.org/10.1057/s41599-024-03242-8

Ifenthaler, D., Majumdar, R., Gorissen, P., Judge, M., Mishra, S., Raffaghelli, J., & Shimada, A. (2024). Artificial intelligence in education: Implications for policymakers, researchers, and practitioners. *Technology, Knowledge and Learning*, *29*(4), 1693-1710. https://doi.org/10.1007/s10758-024-09747-0

Islami, M. M., Rahyuni, S., & Rukayyah, A. (2024). Strategic Branding: Building Market Positioning and Business Growth through Integrated Management Practices. *Advances in Business & Industrial Marketing Research*, *2*(2), 110-122. https://doi.org/10.60079/abim.v2i2.293

Kim, S. W., Lim, S., Hong, S. J., & Lee, Y. (2025). The Effects of Design-Thinking-Based AI Education Programs Utilizing Generative AI on Korean Middle School Students' Creative Problem-Solving Ability. *JOIV International Journal on Informatics Visualization*, 9(4), 1553-1562. https://doi.org/10.62527/joiv.9.4.4378

Laksamana, P., Saripudin, S., Suharyanto, S., & Cahaya, Y. F. (2024). Artificial intelligence-driven brand strategy: Impact on awareness, image, equity, and loyalty. *Journal of Infrastructure Policy and Development*, 8(15), 10084. https://doi.org/10.24294/jipd10084

Liang, Y., Chen, R., Hong, H., Li, S., & Li, H. (2025). Shaping digital entrepreneurial intention in higher education: the role of entrepreneurship education, creativity, and digital literacy among Chinese university students. *Journal of Innovation & Knowledge*, 10(5), 100788. https://doi.org/10.1016/j.jik.2025.100788

Makhlooq, A., & Al Mubarak, M. (2024). Artificial intelligence and marketing: Challenges and opportunities. *Technological innovations for business, education and sustainability*, 3-16. https://doi.org/10.1108/978-1-83753-106-620241001

Neumeyer, X., & Santos, S. (2022, April). Digitalization and the entrepreneurial mindset: a conceptualization and research framework. In *2022 IEEE Technology and Engineering Management Conference (TEMSCON EUROPE)* (pp. 198-203). IEEE. https://doi.org/10.1109/TEMSCONEUROPE54743.2022.9801937

Nhamo, G. (2012). Participatory action research as a platform for community engagement in higher education. *Journal of Higher Education in Africa/Revue de l'enseignement supérieur en Afrique*, *10*(1), 1-21. Google Scholar

Pramesti, P. (2023). Pemanfaatan Kecerdasan Buatan bagi Wirausahawan Digital. *ATRABIS Jurnal Administrasi Bisnis (e-Journal)*, 10(1), 225-231. https://doi.org/10.38204/atrabis.v10i1.2034

Rao, P., Kumar, S., Chavan, M., & Lim, W. M. (2023). A systematic literature review on SME financing: Trends and future directions. *Journal of Small Business Management*, *61*(3), 1247-1277. https://doi.org/10.1080/00472778.2021.1955123

Rauf, R., Raheni, C., Tovan, T., Mardia, M., Setiawan, L., & Rodliyatun, M. (2024). Entrepreneurship education and digital transformation, opportunities and challenges in Indonesia. *Journal of Infrastructure Policy and Development, 8*(12), 1-15. https://doi.org/10.24294/jipd.v8i12.7740

Secundo, G., Massaro, A., Del Vecchio, P., & Garzoni, A. (2024). An entrepreneurial university ecosystem for sustaining the twin transition through a complex adaptive system approach. *IEEE*

Transactions on Engineering Management, *71*, 10966-10983. https://doi.org/10.1109/TEM.2024.3405021

Shenkoya, T., & Kim, E. (2023). Sustainability in Higher Education: Digital Transformation of the Fourth Industrial Revolution and Its Impact on Open Knowledge. *Sustainability*, 15(3), 2473. https://doi.org/10.3390/su15032473

Thottoli, M. M., Cruz, M. E. L. T., & Abri, S. S. S. A. (2024). The incubation revolution: transforming entrepreneurial education with artificial intelligence. *Asia Pacific Journal of Innovation and Entrepreneurship*. https://doi.org/10.1108/apjie-11-2023-0221

Uriarte, S., Baier-Fuentes, H., Benavides, J. E., & Inzunza-Mendoza, W. (2025). Artificial intelligence technologies and entrepreneurship: a hybrid literature review. *Review of Managerial Science*. https://doi.org/10.1007/s11846-025-00839-4

Van Giffen, B., Herhausen, D., & Fahse, T. (2022). Overcoming the pitfalls and perils of algorithms: A classification of machine learning biases and mitigation methods. *Journal of Business Research*, *144*, 93-106. https://doi.org/10.1016/j.jbusres.2022.01.076

Vidy, Hardi, R., Yamani, & Alimyaningtias, W. N. (2022). The use of e-learning to increase student innovation in technopreneurship. *AIP Conference Proceedings*, 2658, 70004. https://doi.org/10.1063/5.0106994

Wahyuningsih, N., Salam, R., Pinandita, M. K., & Setyaningsih, R. (2025). The Role of Entrepreneurship Education in Enhancing Students' Innovation Capability and Competitiveness in Facing the 4.0 Era. *Interdisciplinary Social Studies*, 4(4), 518. https://doi.org/10.55324/iss.v4i4.898

Zhou, X., Zhang, J., & Chan, C. (2024). Unveiling students' experiences and perceptions of artificial intelligence usage in higher education. *Journal of University Teaching and Learning Practice*, *21*(6), 126-145. https://doi.org/10.53761/xzjprb23