



Micro-curriculum design of educational technology product-oriented in entrepreneurship courses

Mario Emilzoli¹, Ai Pemi Priandani²

^{1,2}Universitas Pendidikan Indonesia, Bandung, Indonesia

²Madani Edu Solution, Bandung, Indonesia

emilzoli@upi.edu¹, femyprian@upi.edu²

ABSTRACT

Most universities in Indonesia have organized entrepreneurship courses through study programs according to their respective characteristics. However, many entrepreneurial product outputs from these courses remain irrelevant to the field of expertise in the study program, including the Educational Technology study program. A course's output or achievement can be conditioned through the curriculum or the context of the course, known as the micro curriculum. Based on this, this study aims to produce a micro curriculum design for entrepreneurship courses oriented towards educational technology products. The method used is Design-Based Research (DBR), which involves needs analysis, curriculum design, construction, evaluation, and reflection. The results showed that the curriculum design developed met the needs of entrepreneurial competencies relevant to the educational technology industry. In addition, this study also provides recommendations related to learning content, learning strategies, and assessment models that can be used to support the effectiveness of the designed curriculum. Hopefully, this curriculum can help students understand entrepreneurial theory and apply it to make innovative educational technology products.

ARTICLE INFO

Article History:

Received: 5 Feb 2024

Revised: 10 May 2024

Accepted: 12 May 2024

Available online: 19 May 2024

Publish: 22 May 2024

Keyword:

educational technology;
entrepreneurship education;
micro-curriculum

Open access

Inovasi Kurikulum is a peer-reviewed open-access journal.

ABSTRAK

Mayoritas perguruan tinggi di seluruh Indonesia pada dasarnya telah menyelenggarakan mata kuliah kewirausahaan melalui program studi sesuai dengan ciri khas masing-masing. Namun, masih banyak ditemui luaran produk kewirausahaan dari mata kuliah tersebut tidak relevan dengan bidang keahlian yang terdapat pada program studi, tidak terkecuali pada program studi Teknologi Pendidikan. Luaran atau capaian dari sebuah mata kuliah pada dasarnya dapat dikondisikan melalui kurikulum atau dalam konteks mata kuliah dikenal dengan kurikulum mikro. Berdasarkan hal tersebut, penelitian ini bertujuan untuk menghasilkan desain kurikulum mikro mata kuliah kewirausahaan yang berorientasi pada produk teknologi pendidikan. Metode yang digunakan adalah Design Based Research (DBR), yang melibatkan analisis kebutuhan, desain dan konstruksi kurikulum, serta evaluasi dan refleksi. Hasil penelitian menunjukkan bahwa desain kurikulum yang dikembangkan mampu memenuhi kebutuhan kompetensi kewirausahaan yang relevan dengan industri teknologi pendidikan. Selain itu, penelitian ini juga memberikan rekomendasi terkait konten pembelajaran, strategi pembelajaran, dan model penilaian yang dapat digunakan untuk mendukung efektivitas kurikulum yang dirancang. Diharapkan, kurikulum ini dapat membantu mahasiswa tidak hanya memahami teori kewirausahaan, tetapi juga menerapkannya dalam pembuatan produk teknologi pendidikan yang inovatif.

Kata Kunci: kewirausahaan; mikro kurikulum; teknologi pendidikan

How to cite (APA 7)

Emilzoli, M., & Priandani, A. P. (2024). Micro-curriculum design of educational technology product-oriented in entrepreneurship courses. *Inovasi Kurikulum*, 21(2), 1011-1026.

Peer review

This article has been peer-reviewed through the journal's standard double-blind peer review, where the reviewers and authors are anonymised during review.

Copyright

2024, Mario Emilzoli, Ai Pemi Priandani. This an open-access is article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) <https://creativecommons.org/licenses/by-sa/4.0/>, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author, and source are credited. *Corresponding author: emilzoli@upi.edu

INTRODUCTION

Entrepreneurship creates new value by exploiting available opportunities (Arend, 2023; Ireland et al., 2023; Zen et al., 2023). Entrepreneurship is about starting a business, developing innovative ideas, taking measurable risks, and effectively managing resources to achieve specific goals (Samat et al., 2023). In the same context, an entrepreneur can be identified as an individual who dares to take risks, is creative in finding opportunities, and is persistent in realizing his ideas (Daspit et al., 2023; Harrison et al., 2023; Wei et al., 2024). Entrepreneurs are essential in driving economic and social progress by creating new products and services, sparking innovation, and creating jobs (Sagar et al., 2023; Azamat et al., 2023; Bulturbayevich, 2023).

The topic of entrepreneurship has become a phenomenon that has become quite popular in recent decades, especially related to efforts or encouragement from the government to produce new entrepreneurs (Pabendon et al., 2023; Wulandari et al., 2023; Yuliana et al., 2023). This encourages economic growth, planting independence, and improving community welfare (Hasan, 2020). In this context, higher education as one of the institutions under the Ministry of Education and Culture, Research and Technology (Kemdikbudristek) is one of the institutions that is quite intensive in making various efforts to produce young entrepreneurs from educated circles, considering that the number of entrepreneurs who come from university graduates is still very small (Sedyati, 2022; Siregar et al., 2023; Yuliana, 2023).

Based on data from the Central Statistics Agency, as of August 2023, there are 56.5 million entrepreneurs in Indonesia. Of the 56.5 million entrepreneurs, only 873 thousand people have a higher education background (Minimum D1) or (1.55%). Even if the data is narrowed down to the undergraduate level, the number will be much reduced. This small number of entrepreneurs is undoubtedly a problem that needs to be resolved, considering that Indonesia has enormous potential in the context of the availability of an entrepreneurial environment. This aligns with a report released by the Global Entrepreneurship Monitor (GEM) in 2022, which states that Indonesia ranks seventh worldwide for the quality of the entrepreneurial environment. In addition, data from 2023 shows that Indonesia is included among the 20 countries with the largest economic power in the world.

The data above shows that there is a significant gap to be solved so that Indonesia's goals and aspirations to enter the five countries with the largest economic power in the world and Indonesia Emas in 2045 can be appropriately realized (Maliha, 2024; Wahyuningtyas et al., 2024). The government has made various efforts to realize this, including Peraturan Presiden Nomor 2 Tahun 2022 tentang Pengembangan Kewirausahaan Nasional, Youth Entrepreneurship Development Program by Kementerian Pemuda dan Olahraga (Kemenpora), Paternpreneur Program by Kementerian Komunikasi dan Informasi (Kemenkominfo), Wirausaha Merdeka by the Kementerian Pendidikan dan Kebudayaan Riset dan Teknologi (Kemdikbudristek) and many more activities workshops or training on a smaller scale.

Of the many programs that various government institutions have organized, Kemdikbudristek is one of the most serious in encouraging more optimal entrepreneurship programs, especially at the university level (Saefullah, 2022). This can be seen from various entrepreneurship programs implemented in the university environment, such as the Merdeka Belajar Kampus Merdeka (MBKM), Wirausaha Merdeka, the Program Pembinaan Mahasiswa Wirausaha (P2MB), and Program Kreativitas Mahasiswa-Kewirausahaan (PKM-K). Even in recent years, universities in Indonesia have made entrepreneurship a unique course to be given to students as an alternative for students after they complete their studies. More detail, most study programs in Indonesia have made entrepreneurs one of the graduate profiles following their respective fields of expertise, including educational technology study programs (Mulyana et al., 2022; Sumual, 2023).

In Era Society 5.0, higher education strategically fosters entrepreneurial spirit among the younger generation (Wardhani, 2023). College graduates are expected to have the knowledge and skills needed

to work in a relevant company or institution and the ability and courage to start their own business. In substance, the entrepreneurship curriculum currently being carried out in various universities has provided various competencies relevant to entrepreneurial needs for students (Gusriani et al., 2022; Novrita et al., 2023). However, it is unfortunate that these competencies only end in the classroom. This means that students only understand entrepreneurship but have not obtained the part that is no less important, namely direct experience in entrepreneurship and product trials on potential customers, seeing consumer satisfaction or input, and so on.

In addition, the products produced in entrepreneurship courses are still very few that are oriented to products that are relevant to the field of educational technology, such as interactive learning media, podcasts, digital-based assessment systems, and educational technology products which in this digital era are significantly trending to use (Nadhiroh, 2020; Rahmawati et al., 2023). Following the search conducted through the study of documentation of products produced by students in entrepreneurship courses, there are many entrepreneurial products or plans outside the field of educational technology, such as culinary.

Meanwhile, on the other hand, the courses in the educational technology study program have great potential to be used as entrepreneurial products (Mugiono et al., 2021). Last but not least, in the aspect of entrepreneurial product assessment, the assessment applied is only focused on the lecturer's assessment of the product proposed by students. Students also need to be given concrete assessments from potential customers through the presentations they make to potential customers. This can help students get valuable input on the entrepreneurial products they develop.

Although entrepreneurship courses have been applied thoroughly, most graduates are still more oriented toward finding a job than becoming entrepreneurs (Sugiarti, 2020; Haqiqi, 2023; Salsabila, 2023). This shows that entrepreneurship courses are not simple and require a more comprehensive approach. In this case, a comprehensive curriculum design is needed following actual conditions in the business world where products are not only developed but also need to be tested through direct derivative activities to potential consumers (Nurhasan & Baharsyah, 2023; Widiyanti et al., 2023; Irawan et al., 2024).

Based on searches done through Google Scholar or SINTA, many studies discuss the entrepreneurship education curriculum or the development of entrepreneurship courses. It emphasizes a curriculum oriented toward internships and strengthening business incubation (Setiawan et al., 2019). Curriculum development through the involvement of the business world so that students gain real experience, which in turn can improve students' entrepreneurial spirit (Maisah et al., 2020). Entrepreneurship education needs to provide an entrepreneurial ecosystem in the form of a business incubator. However, implementation still has shortcomings, especially in the pillars of regulation, financing capital, and markets (Faqihuddin et al., 2023).

The research results above show that developing an entrepreneurship curriculum in universities significantly impacts students' entrepreneurial ability and interest. An effective curriculum should include practical components such as internships and incubators and be responsive to market needs and current technology (Roopchund, 2020). In addition, effective implementation also requires support from all relevant parties, including lecturers, industry, and government, to create a conducive ecosystem for student entrepreneurship development (Lotulung et al., 2018).

Referring to various studies related to the entrepreneurship course curriculum, as explained above, this research will focus on developing micro curriculum designs for entrepreneurship courses oriented toward educational technology products. Overall, this research is expected to contribute to improving the quality and relevance of entrepreneurship courses in Indonesia, especially in the context of educational technology products. Through the development of innovative micro-curriculum designs, this research is expected to help produce young entrepreneurs who are competent, creative, and able to contribute to

Indonesia's economic progress. The research questions are as follows: (1) What competencies are appropriate to be applied to the curriculum of the educational technology entrepreneurship course? (2) What content is the right to achieve entrepreneurial competencies oriented toward educational technology products? (3) What is the right learning strategy for the entrepreneurship course curriculum? (4) What is the correct assessment model for the entrepreneurship course curriculum?

LITERATURE REVIEW

Micro Curriculum

Alvunger et al., in a book titled "*Conclusions: Patterns and Trends in Curriculum Making in Europe*," stated that a micro curriculum is a structured approach in curriculum development that emphasizes the detail and specificity of content and teaching methods designed to achieve specific learning objectives. This approach is often used in educational and training contexts that require specific skills that can be applied directly and effectively in a relatively short period. Conceptually, the micro curriculum aims to provide a framework that allows teachers and learners to achieve maximum results from the teaching and learning process with more efficient time. The micro curriculum is usually shorter and more specific than the macro curriculum as we know it.

In higher education, the micro curriculum offers a more focused and structured approach to curriculum development to achieve specific learning outcomes relatively quickly (Jin, 2020). Micro-curricula allow the development of particular and focused learning materials on specific competencies needed by students (Ashraf, 2020). In addition, the micro curriculum provides more flexibility in responding to rapidly changing needs in the business, industrial, and industrial (Romero-Sacoto et al., 2021). Through shorter duration, micro-curricula can be quickly adapted or updated to include the latest technology or relevant theory, thus keeping the curriculum up-to-date and relevant.

The main components of the micro curriculum include learning objectives, content, teaching methods, learning media, and assessment (Ramadhon et al., 2021). Learning objectives should be specific and measurable. Content should be relevant and well-organized to facilitate effective learning. Teaching methods must match learners' needs and learning styles while learning media must support content delivery effectively. Assessments should be designed to accurately measure the achievement of learning objectives and provide helpful feedback for learning.

The micro curriculum development process generally involves several critical stages, including needs analysis, micro curriculum design, material development, implementation, and evaluation (Jin, 2020). Needs analysis is a critical first step in which micro-curriculum developers identify learner-specific needs and learning contexts. Micro-curriculum design involves goal setting, content selection, and teaching methods. Material development is the process of making or collecting learning resources that will be used, including choosing the suitable media to package the material that has been selected. Implementation involves the application of the curriculum in the context of actual learning. Finally, evaluation needs to be done to assess the effectiveness of the curriculum and make improvements based on this feedback.

Entrepreneurship Education

Entrepreneurship education in higher education is an educational approach designed to provide the knowledge, skills, and attitudes needed to identify opportunities and develop businesses or innovations in various professional contexts (Harianti et al., 2020; Kardila et al., 2022; Siregar et al., 2023). This concept is not only limited to creating new businesses but also includes the development of creative and innovative

abilities that can be applied in various situations, both within a self-founded enterprise and in the organization in which a person works.

The main purpose of entrepreneurship education, or entrepreneurship courses in universities, is to develop entrepreneurial abilities among students, including creativity, innovation, and creating economic and social value (Kaharudin, 2022). The entrepreneurship course aims to prepare graduates to face the challenges of the market and dynamic work environment and improve their ability to create jobs.

Implementing entrepreneurship courses in universities involves various learning methods, including lectures, workshops, and real projects that allow students to apply theory in actual practice. In its implementation, the application of entrepreneurship courses often involves collaboration between universities, industry, and government to create an ecosystem that supports innovation and entrepreneurship. One collaboration model often used is the Triple Helix Model, which involves collaboration between universities, industry, and government to support the entrepreneurial ecosystem in universities oriented towards the real business world (Sulastru et al., 2022; Nasarudin, 2023).

Educational Technology Products

Educational technology products are tools or media used to help teachers teach and students learn. Along with the times and technological advancements, the definition has changed from focusing only on assistive tools to a more comprehensive learning process. In practice, educational technology products include various tools and platforms that support learning activities (Anderson, 2020). For example, during the COVID-19 pandemic, Information and Communication Technology (ICT) such as Google Classroom, WhatsApp Group, Zoom, and YouTube have become some very popular applications or digital platforms to support the implementation of online learning activities. This confirms that educational technology products can be adapted to various needs and learning situations.

In the context of educational technology entrepreneurship courses, a significant urgency exists to prepare students to become innovative and adaptive business actors in the digital era. Entrepreneurship teaches how to start and manage a business and develops essential skills such as problem-solving, critical thinking, and adaptability to rapid changes in technology and markets (Sumual, 2022; Salsabila, 2023; Novrita et al., 2023). Entrepreneurship courses oriented towards educational technology products emphasize the development and utilization of educational technology products to create added value and innovative solutions in the world of education. This includes an introduction to various digital tools and platforms and effective digital marketing strategies to reach a wider audience. This is certainly very relevant to the recent trends in education and learning, namely personalized learning and gamification (Pratama et al., 2023; De la Vall & Araya, 2023).

Opportunities for developing educational technology products in the business world are still very wide open, considering the increasing need for innovative and flexible learning solutions continues to increase along with the development of information and communication technology (Williamson, 2023; Liu, 2023). Therefore, the educational technology entrepreneurship course equips students with the knowledge, skills, and framework needed to succeed in a dynamic and technology-based business world (Mohseni et al., 2023; Sutrisno, 2023).

METHODS

This research was carried out from August 2023 to April 2024, involving two resource persons in Curriculum and Learning, two people in Educational Technology, and two practitioners in entrepreneurship. The method used in this study is the Design-Based Research (DBR) method. DBR is a

research methodology used widely in education system research. DBR integrates the design and analysis of educational interventions to develop better educational theory and practice through an iterative cycle involving analysis, design, and revision (Lehrmann et al., 2022). DBR emphasizes using design as a mode of knowledge and consistently places design at the center of the research process (Reilly, 2024). This involves the development of standards focused on the scientific and adequacy of design, which are proposed to strengthen DBR methodologies and ensure that these approaches remain relevant and effective in complex educational contexts (Haagen-Schützenhöfer & Hoft, 2020; Lehrmann et al., 2022; Hoadley, 2022). The details of the application of the DBR method in this study are presented in **Figure 1**.

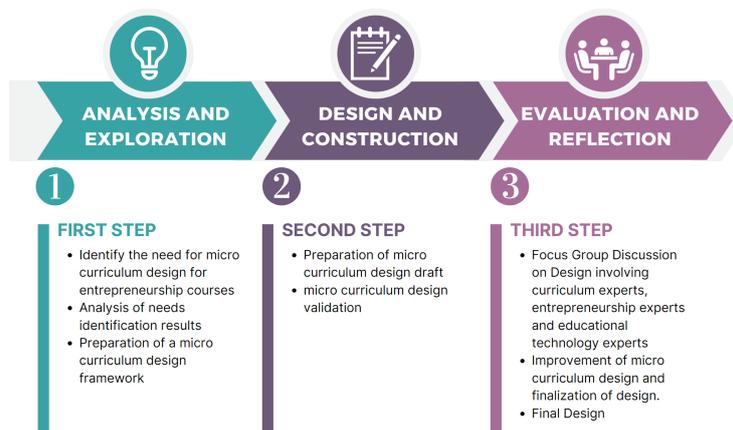


Figure 1. Stages of development of micro curriculum design of entrepreneurial courses oriented to educational technology products
 Source: Research 2023

The initial stage is the basis for developing the micro curriculum design of entrepreneurial courses oriented towards educational technology products. At this stage, a preliminary study was carried out related to identifying needs regarding the micro curriculum of educational technology product-oriented entrepreneurship courses to two subjects involved in learning activities, namely students of the educational technology study program. The data collection technique is a questionnaire containing entrepreneurial competencies needed by educational technology students. The data obtained through the questionnaire is then identified and analyzed, further derived into the initial framework for the micro curriculum design of entrepreneurial courses oriented towards educational technology products to be applied to courses ranging from planning and implementation to assessment.

In the second stage, researchers developed a micro curriculum design for entrepreneurship courses oriented toward educational technology products through a Focus Group Discussion (FGD) involving two experts in curriculum and learning, educational technology, and entrepreneurship. Furthermore, the data obtained through FGD activities are used to finalize the micro curriculum design of educational technology product-oriented entrepreneurship courses prepared for evaluation and reflection.

In the third stage, evaluation and reflection were carried out on the micro curriculum of entrepreneurship courses oriented towards educational technology products. Evaluation and reflection are carried out by distributing questionnaires to subjects in entrepreneurial lecture activities, namely lecturers and students. The questionnaire contains the micro curriculum design of entrepreneurial courses oriented towards educational technology products that have been developed, which are then compared with the experiences of lecturers and students when organizing learning using the commonly used curriculum.

Furthermore, data analysis was carried out using the Miles and Huberman model, which consisted of three steps: data reduction, data presentation, and conclusion drawing. Data analysis was carried out by analyzing questionnaires that had been filled out by respondents (the first stage of DBR), analyzing the results of FGDs related to the development of micro curriculum designs for educational technology

product-oriented entrepreneurship courses, and analyzing the results of evaluation questionnaires and reflections related to micro curriculum design for educational technology product-oriented entrepreneurship courses. After presenting the data, in the end, the researcher concluded from the research results of micro curriculum design of educational technology product-oriented entrepreneurship courses.

RESULTS AND DISCUSSION

First step-Analysis and Exploration

The first step of this research is to analyze and explore the micro curriculum design of educational technology product-oriented entrepreneurship courses. In this context, three things are produced: a list of ideal entrepreneurial competencies, a list of competencies needed by students, and the initial design of the micro curriculum, which includes learning objectives, entrepreneurial content, learning strategies or models, and evaluations to be used.

Based on the identification of competencies carried out through a literature review of various reference sources, Table 1 shows 15 entrepreneurial competencies that a person needs to have to become an entrepreneur.

As is known, identifying needs is a crucial step in preparing a practical and relevant curriculum (Murti, 2020; Nainggolan, 2022). These needs cover various aspects, starting from the needs of students and teaching staff to the needs of industry and society. Therefore, identifying needs in curriculum preparation is a process that cannot be ignored. This process ensures that the curriculum developed is theoretical, practical, and relevant to the various parties involved in the educational process. Through effective identification of needs, education can be more responsive to the dynamics of social, technological, and economic changes that occur (Semahat, 2021; Syafitri, 2023).

Table 1. List of Ideal Competencies of Entrepreneurship

No	Ideal Entrepreneurial Competence	Explanation
1	Creating Opportunities	Ability to identify and explore new opportunities in educational technology
2	Creativeness	Ability to develop innovative ideas and creative solutions in product design
3	Strategic Vision	Ability to set a long-term vision and direct efforts toward achieving those goals
4	Idea Assessment and Evaluation	Ability to assess the feasibility and market potential of new ideas
5	Ethical and Sustainable Thinking	Ability to consider ethical and sustainability aspects in product development
6	Self-Awareness and Self-Efficacy	The ability to understand personal strengths and weaknesses as well as have confidence in one's abilities
7	Motivation and Perseverance	Ability to stay motivated and persevere in the face of challenges
8	Resource Mobilization	Ability to gather and manage necessary resources, including capital and human resources
9	Financial and Economic Literacy	Ability to manage finances and understand economic principles in business
10	Mobilization of Others	Ability to inspire and mobilize others to support and engage in initiatives

No	Ideal Entrepreneurial Competence	Explanation
11	Initiative and Leadership	Ability to take initiative and lead projects or teams
12	Planning and Management	Ability to plan and manage projects effectively
13	Dealing with Uncertainty and Risk	Ability to manage risk and make decisions in uncertain situations
14	Teamwork	Ability to work effectively in a team
15	Learning from Experience	Ability to learn from mistakes and success for continuous improvement

Source: *Bacigalupo (2022)*

Meanwhile, based on the results of the documentation study conducted on the semester implementation plan document for entrepreneurship courses in the educational technology study program can be seen in **Table 2**.

Table 2. Entrepreneurship Competencies in Current Entrepreneurship Courses

No	Entrepreneurship Competencies in Current Courses	Explanation
1	The concept of entrepreneurship, as well as the factors of failure and success of ventures	Ability to explain entrepreneurial concepts and uncover factors of failure and success of ventures
2	Theory of creativity and theory of innovation	Ability to explain creativity and innovation in the field of entrepreneurship
3	Inspiration, opportunity, business character	Find inspiration, opportunities, business character
4	Business plan and risk analysis	Prepare a business plan and conduct a risk analysis
5	Business operations and promotion	Explain and carry out business operations and promotions
6	Marketing Strategy	Develop a marketing strategy
7	Financial management	Ability in financial management
8	Product development	Developing entrepreneurial product development

Source: *Research 2023*

The needs analysis results identify the gap between ideal entrepreneurial competencies and competencies currently available to educational technology students. Of the 15 ideal competencies identified, 10 were unmet needs in the current educational technology entrepreneurship course curriculum. These gaps point to areas requiring improvement in entrepreneurship courses to ensure students have the skills to succeed in the dynamic and often uncertain corporate world.

Based on the needs analysis conducted by comparing the ideal competencies of global entrepreneurship and entrepreneurial competencies currently available in the entrepreneurship course of the educational technology study program, several entrepreneurial competencies must be added to obtain students of the educational technology study program, as presented in **Table 3**.

Table 3. Entrepreneurial Competencies Needed by Educational Technology Students

No	Required Entrepreneurial Competencies	Explanation
1	Strategic Vision	Ability to set a long-term vision and direct efforts toward achieving those goals

No	Required Entrepreneurial Competencies	Explanation
2	Ethical and Sustainable Thinking	Ability to consider ethical and sustainability aspects in product development
3	Self-Awareness and Self-Efficacy	The ability to understand personal strengths and weaknesses as well as have confidence in one's abilities
4	Motivation and Perseverance	Ability to stay motivated and persevere in the face of challenges
5	Resource Mobilization	Ability to gather and manage necessary resources, including c Capital and human resources
6	Mobilization of Others	Ability to inspire and mobilize others to support and engage in initiatives
7	Initiative and Leadership	Ability to take initiative and lead projects or teams
8	Planning and Management	Ability to plan and manage projects effectively
9	Teamwork	Ability to work effectively in a team
10	Learning from Experience	Ability to learn from mistakes and succeed in continuous improvement

Source: Research 2023

The competencies obtained through needs analysis are based on the ideal entrepreneurship competence and entrepreneurial competencies currently available in the educational technology entrepreneurship course curriculum. Then, a draft design of the micro curriculum of the educational technology product-oriented entrepreneurship course is carried out. The draft curriculum design (initial framework) was developed by combining ideal entrepreneurial competencies with educational technology entrepreneurship course curriculum competencies. The draft design can be seen in **Figure 2**.

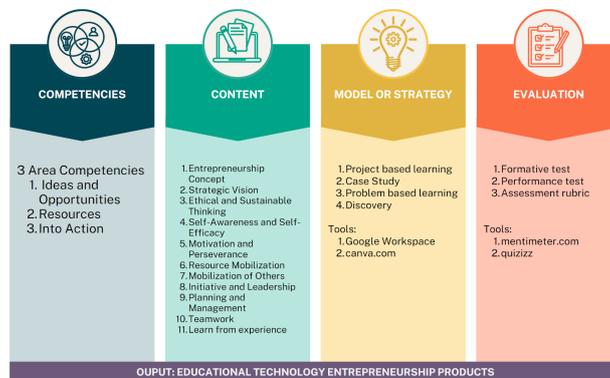


Figure 2. The initial framework of micro curriculum design

Source: Research 2023

The micro-curriculum of educational technology product-oriented entrepreneurship courses is designed to produce graduates who not only have entrepreneurial knowledge and skills but are also able to develop innovative products in the field of educational technology that can provide solutions to learning problems. In today's digital era, education is one of the fields with the most potential to be developed (Soegoto, 2020; Papageorgiou et al., 2021; Hia et al., 2022). This is supported by the current condition of business development in the field of educational technology, showing a positive trend driven by ICT advances, changes in consumer behavior, and government support, also in entrepreneurship lesson (Tarmizi et al., 2023; Ramlee et al., 2023; Rafiana, 2024; Kurniawan et al., 2024).

Step Two-Design and Construction

Design and construction is a process that develops from identifying competencies compiled and derived into the initial framework of micro curriculum design of educational technology-oriented entrepreneurship courses. The design of this curriculum contains general curriculum components, namely, objectives or competencies, content or material, learning strategies, and assessments that will be used so that, in the end, entrepreneurial products are oriented toward educational technology products. In micro curriculum design, several things must be considered, namely objectives, content, strategies, and methods and evaluations used (Romero-Sacoto et al., 2021; Jin, 2020). A more detailed explanation of the micro curriculum design can be seen in **Table 4**.

Table 4. Micro Curriculum Design Educational Technology Product-Oriented Entrepreneurship Course

No	Competencies/ Objectives	Contents	Output	Learning Strategy	Assessment Strategy
1	Entrepreneurship Concept	Definition, principles, and components of entrepreneurship	Mindmap of entrepreneurship concept	Discovery Learning based group	Mindmap assessment rubric
2	Strategic Vision	Vision, mission, goals, and strategies for business development in the context of educational technology products	Infographic vision, mission, goals, and strategies of companies in the field of educational technology	Project-based learning	Infographic assessment rubric
3	Ethical and Sustainable Thinking	Ethics and sustainability in business product development in the context of educational technology	Business ethics reports that support the sustainability of a company	Problem-based learning	Report scoring rubric
4	Report scoring rubric	SWOT Analysis	SWOT identification report of a company	Project-based learning	Report scoring rubric
5	Motivation and Perseverance	Motivation, perseverance, and entrepreneurial spirit	Entrepreneurial spirit identification report based on world and Indonesian entrepreneurs	Problem-based learning	Report scoring rubric
6	Resource Mobilization	Ability to gather and manage necessary resources, including capital and human resources	Presentation of the collection of both capital and human resources	Project-based learning	Test performance
7	Mobilization of Others	Ability to inspire and mobilize others to support and engage in initiatives	Play a role in mobilizing HR to be involved and initiative in business	Project-based learning	Role-playing assessment rubric
8	Initiative and Leadership	Ability to take initiative and lead projects or teams	Solve cases related to initiatives in a project	Case study	Case assessment rubric
9	Planning and Management	Ability to plan and manage projects effectively	Creating business ideas in the field of educational technology, including management mechanisms	Project-based learning	Business idea assessment rubric
10	Teamwork	Ability to work effectively in a team	Presentation of business ideas and distribution of tasks from each team	Project-based learning	Test performance
11	Learning from Experience	Ability to learn from mistakes and succeed in continuous improvement	Report on the results of the identification of large companies that went bankrupt	Case study	Case assessment rubric

Source: Research 2023

Third Step-Evaluation and Reflection

In this step, a Focus Group Discussion (FGD) is conducted to relate to the objectives, content, strategies, and assessments used in the micro curriculum of entrepreneurship courses in the educational technology study program. The FGD results were carried out by involving two curriculum experts, two educational technology experts, and two entrepreneurial practitioners. The curriculum design's inputs and improvements are prepared in the second step, as presented in **Table 5**.

Table 5. Results of FGD Micro Curriculum Design

No	Component	Improvement Feedback	Follow-up
1	Objective	Competence is following the need to become an entrepreneur in educational technology.	-
2	Content	The content follows the needs of achieving competencies or curriculum objectives.	-
3	Strategy	The strategy is quite varied, but considering that this course is closely related to the development of the business world, it would be better if it also included practitioner lecturers or entrepreneurs in educational technology.	The strategy section includes guest lecturers of entrepreneurship practitioners in educational technology. Meetings with practitioners are included in competencies or objectives number 4, 5, 8, and 11
4	Assessment/ evaluation	Assessment or evaluation should use assessments oriented to potential customers. For example, it should present products that will be marketed to potential consumers in real terms.	In the evaluation section, consumer-based evaluation is added, where students are asked to find potential customers to assess the entrepreneurial products they have developed.

Source: Research 2023

Based on the evaluation and reflection carried out through FGD, it can be identified that the micro-curriculum design of entrepreneurial courses oriented towards educational technology products follows the rules of curriculum development, which already contain all curriculum components. In terms of curriculum concepts, various components need to be considered, such as objectives, content or material, strategies, and assessment or evaluation. Curriculum components are vital in learning and have essential role in educational success (Ahmadi & Tazreh, 2022; Cantika, 2022).

Although the concept is appropriate, several things need to be added to this design, namely in the strategy and evaluation section. Learning strategy is one of the most essential parts of curriculum implementation. Killen (2023), through a book titled *Effective Teaching Strategies*, stated that the right learning strategy will undoubtedly provide expected results, such as increasing competence in knowledge and skills. In addition, the use of appropriate learning strategies is also very useful in increasing student involvement in participating in learning activities (Pedler et al., 2020; Prince et al., 2020; Bond, 2020). Good student involvement will undoubtedly create a pleasant classroom atmosphere that can foster creativity and produce innovative educational technology products with selling points.

Regarding the assessment strategy used in the micro curriculum design of entrepreneurship courses oriented towards educational technology products, the results of the FGD show that there are additional aspects of assessment. Assessment does not only come from the lecturer's point of view but also needs to add aspects outside the classroom or, in this case, prospective users of the product. In this case, the assessment also involves prospective product users providing an assessment of the product that has been developed through presentations in front of potential users to see how they respond to entrepreneurial products that have been developed.

Objective assessment of entrepreneurial products developed by students by prospective users is important in product improvement and strengthening students' mentality in facing the real business world (Ernawati et al., 2023; Jumawan et al., 2023). Entrepreneurial products by prospective users are also an important component that adds dimensions of realism and practicality in entrepreneurship education. This helps develop better and more relevant products and prepares students with the necessary skills to succeed in the competitive world of entrepreneurship. (Nurhasan, 2023; Widiyanti, et al., 2023; Irawan, et al., 2024).

CONCLUSION

This research is focused on developing micro curriculum designs for entrepreneurship courses oriented towards educational technology products. It was conducted based on four research questions related to entrepreneurial competencies appropriate for students of educational technology study programs, relevant content, effective learning strategies, and effective assessment models to be used in the curriculum design.

There are ten entrepreneurial competencies that educational technology students need to have, as presented in Table 3, including strategic vision, ethical and sustainable thinking, self-awareness and self-efficacy, motivation and perseverance, resource mobilization, mobilization of others, initiative and leadership, planning and management, teamwork, and learning from experience. Furthermore, the appropriate curriculum content to achieve the competencies that have been designed includes definitions, principles, and components of entrepreneurship, vision, mission, goals and strategies for business development, ethics and sustainability in product development, SWOT analysis, motivation and perseverance, resource collection and management, inspiration, and mobilization of others, initiative and leadership, project planning and management, teamwork, and learning from experience. The learning strategies adopted in this curriculum include group-based discovery learning, project-based learning, problem-based learning, and case study. These strategies facilitate active and applicable learning, enable students to put theory into practice, and develop entrepreneurial skills through real projects and case studies. Finally, the assessment model used in this curriculum includes project assessment rubrics such as infographics, reports, presentations, role plays, and performance tests. This assessment is designed to measure the achievement of student competencies comprehensively, including knowledge, skills, and attitudes. In addition, consumer-based assessment was introduced as an innovation to assess entrepreneurial products developed by students from the perspective of potential users, providing dimensions of realism and practicality in entrepreneurship education.

This research succeeded in developing a micro curriculum design of entrepreneurship courses oriented towards educational technology products by combining ideal entrepreneurial competencies, relevant content, effective learning strategies, and comprehensive assessment models. This curriculum is expected to help produce young entrepreneurs who are competent, creative, and able to contribute to Indonesia's economic progress through innovation in educational technology.

AUTHOR'S NOTE

The author declares that there is no conflict of interest regarding the publication of this article and confirms that the data and content are free from plagiarism.

REFERENCES

- Ahmadi, P., & Tazreh, S. G. (2022). Relationship between curriculum components of university students, business quality and academic satisfaction, psychology, and educational sciences. *Journal of Higher Education Curriculum Studies*, 13(25), 7-27.
- Anderson, T., & Rivera Vargas, P. (2020). A critical look at educational technology from a distance education perspective. *Digital Education Review*, 37, 208-229.
- Arend, R. J. (2023). Entrepreneurship: A theory for no theory for now. *Strategic Organization*, 21(2), 403-415.
- Ashraf, M. W., & Alanezi, F. (2020). Incorporation of sustainability concepts into the engineering core program by adopting a micro curriculum approach: A case study in Saudi Arabia. *Sustainability*, 12(7), 2901.
- Azamat, O., Fayzullokh, S., & Nilufar, A. (2023). The impact of entrepreneurship on poverty reduction. *International Journal of Professional Business Review*, 8(3), 9.
- Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). Entrecomp: The entrepreneurship competence framework. *Luxembourg: Publication Office of the European Union*, 10, 1-35.
- Bond, M. (2020). Facilitating student engagement through the flipped learning approach in K-12: A systematic review. *Computers & Education*, 151, 1-53.
- Bulturbayevich, M. B. (2023). Increase the share of the population in the economic sectors through the development of small business and private entrepreneurship. *Journal of Survey in Fisheries Sciences*, 10(2), 2937-2943.
- Cantika, V. M. (2022). Prosedur pengembangan kurikulum (Kajian literatur manajemen inovasi kurikulum). *Inovasi Kurikulum*, 19(2), 171-184.
- Daspit, J. J., Fox, C. J., & Findley, S. K. (2023). Entrepreneurial mindset: an integrated definition, a review of current insights, and directions for future research. *Journal of Small Business Management*, 61(1), 12-44.
- De la Vall, R., R., F., & Araya, F., G. (2023). Exploring the benefits and challenges of AI-language learning tools. *International Journal of Social Sciences and Humanities Invention*, 10(1), 7569-7576.
- Ernawati, S., Ismunandar, I., Haryanti, I., Purnama, I., & Dwiryansyah, M. S. (2023). Implementasi mata kuliah Kewirausahaan 1 melalui kegiatan bazar untuk menumbuhkan jiwa wirausaha pada mahasiswa. *Jurnal Pengembangan dan Pengabdian Masyarakat Multikultural*, 1(2), 66-70.
- Faqihuddin, F., Soedarto, T., Sumarsih, E., & Bunda, C. A. P. (2023). Peran inkubator agribisnis dalam pengembangan ekosistem kewirausahaan berbasis pertanian. *Jurnal Agribisnis*, 12(1), 45-54.
- Gusriani, R. Y., Mahriani, E., & Hidayat, T. (2022). Relevansi kurikulum dengan kesiapan, daya serap lulusan dan kepuasan pengguna (user) terhadap alumni uin antasari banjarmasin di dunia kerja (tracer study tahun 2018-2021). *Jurnal Hadrat Madaniyah*, 9(2), 19-36.
- Haagen-Schützenhöfer, C., & Hopf, M. (2020). Design-based research as a model for systematic curriculum development: the example of a curriculum for introductory optics. *Physical Review Physics Education Research*, 16(2), 1-24.
- Haqiqi, M. A., & Cahya, S. B. (2023). Pengaruh persepsi wawasan wirausaha dan motivasi wirausaha terhadap minat berwirausaha mahasiswa s1 Jurusan Pendidikan Ekonomi Universitas Negeri Surabaya. *Jurnal Pendidikan Tata Niaga (JPTN)*, 11(2), 84-91.
- Harianti, A., Malinda, M., Nur, N., Suwarno, H. L., Margaretha, Y., & Kambuno, D. (2020). Peran pendidikan kewirausahaan dalam meningkatkan motivasi, kompetensi dan menumbuhkan minat mahasiswa. *Jurnal Bisnis dan Kewirausahaan*, 16(3), 214-220.
- Harrison, C., Omeihe, I., Simba, A., & Omeihe, K. (2023). Leading the way: The entrepreneur or the leader?. *Journal of Small Business and Entrepreneurship*, 35(6), 890-906.
- Hasan, H. A. (2020). Pendidikan Kewirausahaan: Konsep, karakteristik dan implikasi dalam memandirikan generasi Muda. *Pilar*, 11(1), 99-111.

- Hia, L. N., Madhakomala, R., & Rugaiyah, R. (2022). The concept of student entrepreneurship in the era of independent learning. *Intelektium*, 3(1), 96-107.
- Hoadley, C., & Campos, F. C. (2022). Design-based research: What it is and why it matters to studying online learning. *Educational Psychologist*, 57(3), 207-220.
- Irawan, E. P., Saifulloh, M., & Toruan, R. R. M. L. (2024). Pelatihan branding produk bagi siswa SMK calon pelaku UMKM di Kota Tangerang. *Abdi Moestopo: Jurnal Pengabdian pada Masyarakat*, 7(1), 83-94.
- Ireland, R. D., Withers, M. C., Harrison, J. S., Boss, D. S., & Scoresby, R. (2023). Strategic entrepreneurship: A review and research agenda. *Entrepreneurship Theory and Practice*, 47(2), 495-523.
- Jin, X. (2020). Research on innovation of classroom teaching mode of university education based on micro-curriculum concept. *Frontiers in Educational Research*, 3(10), 10-25.
- Jumawan, J., Saputra, F., & Prabowo, P. B. (2023). Determinasi pelatihan florist dan kualitas pelayanan kewirausahaan pada kejutbypugo Kota Bekasi. *Optimal Jurnal Ekonomi dan Manajemen*, 3(4), 216-227.
- Kaharudin, E., & Djohan, H. A. (2022). Pendidikan kewirausahaan bagi mahasiswa. *Jurnal Ekonomi Bisnis, Manajemen dan Akuntansi*, 1(3), 285-294.
- Kardila, K., & Puspitowati, I. (2022). Pengaruh pendidikan kewirausahaan, pola pikir kewirausahaan, kreativitas terhadap intensi berwirausaha. *Jurnal Manajerial dan Kewirausahaan*, 4(4), 1026-1034.
- Kurniawan, A. R., Sistiyan, S., & Qolbi, Z. F. Efficient learning strategies: Student attraction to entrepreneurship lessons using technology. *Curricula: Journal of Curriculum Development*, 3(1), 125-142.
- Lehrmann, A. L., Skovbjerg, H. M., & Arnfred, S. J. (2022). Design-based research as a research methodology in teacher and social education—a scoping review. *EDeR: Educational Design Research*, 6(3), 1-32.
- Liu, M., & Yu, D. (2023). Towards intelligent e-learning systems. *Education and Information Technologies*, 28, 7845-7876.
- Lotulung, C. F., Ibrahim, N., & Tumurang, H. (2018). Effectiveness of learning method Contextual Teaching Learning (CTL) for increasing learning outcomes of entrepreneurship education. *Turkish Online Journal of Educational Technology-TOJET*, 17(3), 37-46.
- Maisah, M., Sohiron, S., Hariandi, A., Sopian, A., & Sandi, Q. (2020). Pengembangan pendidikan tinggi berorientasi kewirausahaan dalam perspektif global. *Jurnal Ilmu Manajemen Terapan*, 1(4), 305-317.
- Maliha, D. W. (2024). Upaya mempersiapkan UMKM menuju transformasi ekonomi digital. *Manajemen Ekonomi Akuntansi Bisnis Digital dan Kewirausahaan (MEKANISDA)*, 2(1), 79-83.
- Mohseni, A., Mousavi, S. H., & Jamali, M. (2023). The role of entrepreneurship training on students' entrepreneurial attitude and general self-efficiency beliefs. *Quarterly Journal of Research and Planning in Higher Education*, 19(3), 63-80.
- Mugiono, M., Prajanti, S. D. W., & Wahyono, W. (2021). The effect of digital literacy and entrepreneurship education towards online entrepreneurship intention through online business learning and creativity at marketing department in Batang regency. *Journal of Economic Education*, 10(1), 21-27.
- Mulyana, R. A., Nurhotimah, A. S. I., & Mutaqin, Z. (2022). Konsep pendidikan kewirausahaan di perguruan tinggi. *Eduksos Jurnal Pendidikan Sosial & Ekonomi*, 11(1), 8-19.
- Murti, D. K. (2020). Development of educational comic with local wisdom to foster morality of elementary school students: a need analysis. *International Journal of Educational Methodology*, 6(2), 337-343.
- Nadhiroh, P. S., & Trilisiana, N. (2020). Keterampilan kolaborasi mahasiswa teknologi pendidikan dalam mata kuliah Kewirausahaan berbasis proyek. *Epistema*, 1(1), 23-30.
- Nasarudin, & Ahyuni, S. (2023). Strategi pendampingan industri kreatif menengah kerajinan Baduy berbasis local wisdom: Tinjauan model triple helix. *Journal of Socio-Cultural Sustainability and Resilience*, 1(1), 44-61

- Nainggolan, S. (2022). Students' competence needs analysis in curriculum for facing 21st century education. *Al-Ishlah: Jurnal Pendidikan*, 14(2), 2099-2106.
- Novrita, S. Z., Yulastri, A., Effendi, H., & Muskhir, M. (2023). Pengaruh minat berwirausaha dan kurikulum pembelajaran wirausaha terhadap kompetensi wirausaha digital mahasiswa vokasi Tata Busana. *Indonesian Journal of Computer Science*, 12(6), 1-10.
- Nurhasan, N., & Baharsyah, S. (2023). Pembinaan penggunaan Whatsapp Business kepada pelaku bisnis online di Desa Cileungsi. *Prima Abdika: Jurnal Pengabdian Masyarakat*, 3(3), 223-231.
- Pabendon, T., Apriyono, T., Aslim, A., & Murnitasari, M. (2023). Membangun generasi muda mimika sebagai activistpreneur menuju indonesia maju. *Abdi Daya: Jurnal Pengabdian dan Pemberdayaan Masyarakat*, 1(1), 28-37.
- Papageorgiou, G., Mihai-Yiannaki, S., Ioannou, M., Varnava-Marouchou, D., & Marneros, S. (2021). Entrepreneurship education in an era of digital communications. *Universities and Entrepreneurship: Meeting the Educational and Social Challenges by Emerald Publishing*, 1(1), 65-77.
- Pedler, M., Hudson, S., & Yeigh, T. (2020). The teachers' role in student engagement: A review. *Australian Journal of Teacher Education (Online)*, 45(3), 48-62.
- Pratama, M. P., Sampelolo, R., & Lura, H. (2023). Revolutionizing education: harnessing the power of artificial intelligence for personalized learning. *Klasikal: Journal of Education, Language Teaching and Science*, 5(2), 350-357.
- Prince, M., Felder, R., & Brent, R. (2020). Active student engagement in online STEM classes: Approaches and recommendations. *Advances in Engineering Education*, 8(4), 1-25.
- Rafiana, N. N. (2024). Technopreneurship strategy to grow entrepreneurship career options for students in higher education. *Adi Journal on Recent Innovation*, 5(2), 110-126.
- Rahmawati, F. N., Subiyantoro, S., & Hayati, B. N. (2023). Efektifkah kurikulum dan materi berbasis enterpreneurship di perguruan tinggi indonesia saat ini?. *Judika (Jurnal Pendidikan Unsika)*, 11(1), 1-14.
- Ramadhon, S., Emilzoli, M., & Rullyana, G. (2023). Desain kurikulum pelatihan digitalisasi pembelajaran kolaboratif bagi widyaiswara. *Edutech*, 22(3), 255-268.
- Ramlee, N. A. Z., Abd Rahim, L. N., Rahim, H. L., & Ahmad, N. N. (2023). Bibliometric analysis of technopreneurship research in scopus database. *Information Management and Business Review*, 15(3), 359-368.
- Reilly, C., & Reeves, T. C. (2024). Refining active learning design principles through design-based research. *Active Learning in Higher Education*, 25(1), 81-100.
- Romero-Sacoto, L. A., Yambay-Bautista, X. R., Ramírez-Coronel, A. A., Andrade-Molina, M. C., Cordero-Zumba, N. B., & Magdalena-Sarmiento, M. (2021). Validation of the questionnaire of perception of the importance, usefulness and structure of the syllabus in microcurricular planning. *Archivos Venezolanos de Farmacología y Terapéutica*, 40(6), 596-604.
- Roopchund, R. (2020). Analysing the different entrepreneurship education initiatives for the development of a conducive and motivating entrepreneurial ecosystem in Mauritius. *Management and Entrepreneurship: Trends of Development*, 3(13), 97-113.
- Sagar, G., Anand, B., Perumalla Varalaxmi, A. S., & Raj, S. (2023). The role of entrepreneurship in economic growth and development. *Journal of Survey in Fisheries Sciences*, 10(1), 5940-5955.
- Saefullah, A., Hidayatullah, S., Noviar, E., Fadli, A., Herawati, T., & Nurhayati, N. (2022). Pengembangan skill wirausaha mahasiswa STIE Ganesha melalui Program Pembinaan Mahasiswa Wirausaha (P2MW) Kemdikbudristek RI Tahun 2022. *Unri Conference Series: Community Engagement*, 4(1), 164-174.
- Salsabila, S., & Rohman, A. (2023). Identifikasi minat dalam memilih karier wirausaha pada mahasiswa ekonomi syariah Fakultas Keislaman Universitas Trunojoyo Madura. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, 7(2), 191-207.
- Samat, M. F., Anual, N., Hussin, S. N. A., & Rahim, H. L. (2023). Factors influencing entrepreneurial propensity among urban poor family in Malaysia. *Review of Integrative Business and Economics Research*, 12(1), 230-246.

- Sedyati, R. N. (2022). Perguruan tinggi sebagai agen pendidikan dan agen pertumbuhan ekonomi. *Jurnal Pendidikan Ekonomi: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi dan Ilmu Sosial*, 16(1), 155-160.
- Semahat, A. Y. S. U., & Özcan, F. H. (2021). Needs analysis in curriculum design: Language needs of tourism students. *Sakarya University Journal of Education*, 11(2), 305-326.
- Setiawan, D., Saputra, H. D., & Chaniago, M. (2019). Pelatihan keterampilan membangun bisnis (wirausaha) bengkel sepeda motor secara mandiri bagi siswa SMK. *Suluh Bendang: Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 20(1), 21-28.
- Siregar, P. P., Julmasita, R., Ananda, S., & Nurbaiti, N. (2023). Pentingnya pendidikan Kewirausahaan di perguruan tinggi. *Asatiza: Jurnal Pendidikan*, 4(1), 43-50.
- Soegoto, E. S., & Luckyardi, S. (2020). Computerized entrepreneurship education-special review on life quality in digital era. *In Journal of Physics: Conference Series*, 1477(3), 1-9.
- Sugiarti, S. (2020). Ketertarikan mahasiswa jurusan manajemen transportasi udara untuk menjadi entrepreneur dalam industri jasa angkutan udara. *Jurnal Mitra Manajemen*, 11(1), 79-88.
- Sulastri, F., Syifa, N. N., & Hardianti, S. (2022). Pendekatan triple helix pada UMKM kuliner Par Mambo dalam meningkatkan pertumbuhan ekonomi di Tasikmalaya. *Jurnal Abdimas Adpi Sosial dan Humaniora*, 3(2), 292-299.
- Sumual, J., & Maramis, J. B. (2022). Urgensi entrepreneurship education bagi mahasiswa perguruan tinggi. *Jurnal Pembangunan Ekonomi dan Keuangan Daerah*, 23(1), 1-13.
- Sutrisno. (2023). The role of technopreneurship education in increasing student entrepreneurial interest and competence. *Jurnal Minfo Polgan*, 12(2), 1678-1687.
- Syafitri, Y. (2023). Need analysis for development of physics e-module integrated with critical reading to enhance critical thinking and scientific literacy in senior high school. *Jurnal Penelitian Pendidikan IPA*, 9(10), 8065-8069.
- Tarmizi, R., Septiani, N., Sunarya, P. A., & Sanjaya, Y. P. A. (2023). Harnessing digital platforms for entrepreneurial success: a study of technopreneurship trends and practices. *Aptisi Transactions on Technopreneurship (ATT)*, 5(3), 278-290.
- Wahyuningtyas, W., Riadhasilmi, N., Rezky, N. S., & Butar, Y. F. B. (2024). Program karang taruna dalam pengembangan nutripreneur masa depan. *Abdimas Indonesian Journal*, 4(1), 105-112.
- Wardhani, P. S. N., & Nastiti, D. (2023). Implementasi pendidikan kewirausahaan dalam menumbuhkan minat berwirausaha mahasiswa. *Prima Magistra: Jurnal Ilmiah Kependidikan*, 4(2), 177-191.
- Wei, L., Zhang, X., Yang, M., & Lin, L. (2024). Understanding the relationship between entrepreneur courage quotient and enterprises' sustainable growth. *Finance Research Letters*, 59, 1-12.
- Widiyanti, N. M. N. Z., Mandalika, E. N. D., Hidayanti, A. A., Setiawan, R. N. S., & Nabilah, S. (2023). Pengembangan strategi pemasaran digital melalui pelatihan fotografi produk menggunakan smartphone. *Jurnal Siar Ilmuwan Tani*, 4(2), 263-267.
- Williamson, B., & Komljenovic, J. (2023). Investing in imagined digital futures: The techno-financial 'futures' of edtech investors in higher education. *Critical Studies in Education*, 64(3), 234-249.
- Wulandari, M. C., Hakim, L., Supriyatin, R. D., Ratnasari, D. F., & Darmawan, F. (2023). Analisis dukungan finansial UMKM di Semarang (Analisis menggunakan data potensi desa). *Jurnal Bisnis dan Manajemen West Science*, 2(2), 153-162.
- Yuliana, F. H., Hasmidyani, D., Susanti, E., & Budiman, M. A. (2023). Menumbuhkan semangat wirausaha mahasiswa melalui webinar kewirausahaan berkelanjutan. *Warta LPM*, 26(1), 22-30.
- Zen, A., Kusumastuti, R., Metris, D., Gadzali, S. S., & Ausat, A. M. A. (2023). Implications of entrepreneurship education as a field of study for advancing research and practice. *Journal on Education*, 5(4), 11441-11453.