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Developing Merdeka Belajar Kampus Merdeka (MBKM) Course Package to Foster Entrepreneurship Among Pre-Service Chemistry Teachers

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Abstract
This research aims to develop a Independent Campus Learning Program - Merdeka Belajar Kampus Merdeka (MBKM) course package designed to foster the entrepreneurial spirit among pre-service chemistry teachers in the Chemistry Education Study Program at FKIP Universitas Syiah Kuala. Utilizing the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), the study conducts a comprehensive needs analysis, designs a curriculum prototype, validates and tests the course package, and evaluates its effectiveness. The results indicate that the developed course package successfully integrates chemistry knowledge with entrepreneurial skills, providing students with practical experience in applying chemistry to develop innovative products based on local resources. Program evaluation also reveals a significant increase in students' insights, entrepreneurial skills, and soft skills, along with a heightened interest in entrepreneurship. This research contributes to the development of a more relevant and applicable curriculum in preparing prospective chemistry teachers with entrepreneurial competencies, aligned with the objectives of the MBKM program.

Keywords: Entrepreneurship; Chemistry Teacher; Independent Campus Learning Program; Pre-Service

INTRODUCTION

One of the main forces behind economic expansion and employment creation in a time of globalization and quick technical development is entrepreneurship (Khamimah, 2021; Sumual & Maramis, 2022). Through the Independent Campus Learning Program (MBKM), the Indonesian government has pushed universities to modify their curricula to better meet the demands of business and society (Hasibuan et al., 2024; Sopiansyah et al., 2022). In addition to giving students employable skills, this program seeks to offer more adaptable and relevant learning opportunities (Muis et al., 2024; Sintiawati et al., 2022; Suryaman, 2020). The MBKM program's adoption in Indonesian institutions shows how combining academic instruction with real-world experience can improve students' preparedness for the workforce (Rahmawanti & Nurzaelani, 2022)

Not only is entrepreneurship important in the economic world, but it is also essential in education. Pre-service teachers equipped with entrepreneurial skills can become creative change agents (Wardhani & Nastiti, 2023) and can come up with original answers to problems in education (Jr, 2024; J. Kurniawan & Nurachadijat, 2023). Teachers that possess an entrepreneurial mindset are able to make efficient use of resources, take the initiative to create more pertinent teaching strategies, and inspire students to think creatively and critically (M & Adeshina, 2024; Mahanal, 2014). Furthermore, by providing possibilities to create alternative educational institutions or programs that enhance the quality of education in local communities, an entrepreneurial spirit empowers educators to take on a more active role in society (Amankwaah et al., 2024; Nuraeni, 2022).

A variety of course packages are available through the MBKM to help pre-service chemistry teachers overcome the difficulties of encouraging an entrepreneurial spirit. This curriculum gives students the chance to participate in independent projects, internships, and practical work—all of which can foster the development of entrepreneurial abilities (Wahyuni & Widiarti, 2010). For one or two semesters, students can learn and practice entrepreneurship directly through Airlangga University's MBKM-sponsored entrepreneurship program. Additionally, initiatives such as Independent Entrepreneurship, which emphasize the growth of student entrepreneurship, include success metrics intended to improve the chances of suitable employment for graduates of higher education (Arsyad & Widuhung, 2022). By leveraging these opportunities, pre-service chemistry teachers can gain practical experience and skills needed to become innovative change agents in both education and society.

There is a pressing need to modify the curriculum at the higher education level to place a greater emphasis on entrepreneurial development, especially in the Chemistry Education Study Program at the Faculty of Teacher Training and Education, Universitas Syiah Kuala. Chemistry students must be able to use their understanding of chemical theories and concepts in creative entrepreneurial scenarios in addition to having a solid understanding of them (Andari et al., 2021). Since these demands have not been adequately met by the current curriculum, many students are ill-equipped to handle entrepreneurial problems once they graduate.

It is essential in this regard to create a MBKM course package that is especially intended to encourage an entrepreneurial attitude. Students who complete this course package should gain a thorough understanding of a variety of entrepreneurship-related topics, such as product creation, marketing, business management, and opportunity identification. Also, the course package needs to be in line with the MBKM curriculum, which places a strong emphasis on learning opportunities that are directly applicable to real-world circumstances. Additionally, MBKM gives students the chance to improve their skills, particularly in the areas of creativity, teamwork, communication, logical reasoning, and creative thinking (Purwowidodo & Zaini, 2023). The MBKM program serves as a platform to address the key challenges of aligning education institutions with the needs of Business and Industry (DUDI) (F. S. Kurniawan et al., 2023).

The topic of analyzing the implementation of learning in the Merdeka Belajar curriculum has been the subject of several previous research studies (Lenggogeni et al., 2024). Another study revealed that many entrepreneurship courses that have been adapted in MBKM still do not include any practical components, thus it can be interpreted that they do not adequately prepare students for real-world problems in the field (Fadillah et al., 2024). Other research conducted by Rahmawanti & Nurzaelani (2022) has identified improvements in soft skills and hard skills. This study has revealed that there are still significant gaps in understanding and measuring the overall impact of implementing off-campus programs. Research by Pratiwi et al. (2022); Sintiawati et al. (2022); Wardhani & Nastiti (2023) has emphasized the importance of student freedom in choosing programs, but has not yet produced an instrument that can accurately assess program achievement according to the guidelines of the Directorate General of Higher Education.

Based on previous findings, several issues need to be addressed, including the lack of integrated entrepreneurship curricula, suboptimal MBKM implementation, and limited research on the systematic development of entrepreneurship course packages (Lenggogeni et al., 2024). By creating a more applicable and useful course curriculum that is suited to the requirements of both industry and students,

this study seeks to address these problems. This study will include needs analysis, curriculum design, material production, and the assessment of the implementation of the course package through the research and development (R&D) process. With this strategy, it is envisaged that the course package will significantly contribute to the development of students' entrepreneurship and improve the curriculum's relevance to industry and societal demands.

RESEARCH METHODS

Research Design

This study was designed using the Research and Development (R&D) approach by adopting the ADDIE development model. The qualitative approach was chosen to gain a comprehensive understanding of the development of entrepreneurship curriculum in the Chemistry Education Study Program, Faculty of Teacher Training and Education, University Syiah Kuala.

Research Target/Subject

The research target includes two main aspects, namely the subject and object of research. The research subjects consist of students of the Chemistry Education Study Program, lecturers in charge of entrepreneurship courses, stakeholders in related industries, and curriculum and entrepreneurship experts. Meanwhile, the research objects include the ongoing entrepreneurship curriculum, entrepreneurship learning needs, and curriculum components to be developed.

Research Procedure

The research procedure was carried out through five stages according to the ADDIE model. The Analysis stage begins by analysing the current curriculum, student needs, industry opportunities and challenges, and available resources. In the Design stage, syllabus design, lesson plan development, preparation of lecture contracts, creation of student activity sheets, and design of activity journals were carried out. The Development stage involved validation of prototypes by material experts, curriculum experts, and industry practitioners, followed by revisions based on validator input. Implementation was carried out through limited trials in the MBKM program, accompanied by monitoring of implementation and documentation of the process. The last stage, namely Evaluation, includes evaluation of implementation results, analysis of feedback from stakeholders, and final refinement of the curriculum.

Instruments, and Data Collection Techniques

To collect comprehensive data, this study used various research instruments. Document analysis sheets were used to review the curriculum and learning needs, including a curriculum analysis checklist, a needs analysis form, and a document evaluation rubric. Interview guidelines were prepared to obtain more in-depth information from students, lecturers, and industry practitioners. Data collection techniques are adjusted to the needs of each ADDIE stage. At the Analysis stage, data is collected through stakeholder interviews, student needs surveys, and Focus Group Discussions (FGD). The Design stage involves documentation of the design process, expert assessments, and peer reviews. Data collection at the Development stage is carried out through expert validation using validation instruments, documentation of the development process, and revision and improvement notes. During Implementation, data is obtained through direct observation, documentation of the learning process, student activity journals, and periodic evaluation monitoring. At the Evaluation stage, data is collected through user satisfaction surveys, in-depth interviews, analysis of implementation result documents, and entrepreneurial skills.

Data analysis technique

The data analysis carried out includes the process of data reduction, data presentation, and formulating conclusions based on the results of interviews, observations, and documentation.

RESULTS AND DISCUSSION

Analysis Phase

The needs analysis was conducted to identify the future needs of alumni from the Chemistry Education Study Program (PSPK) of FKIP Universitas Syiah Kuala (USK). This stage involved a comprehensive review of several key aspects:

1. An analysis of the Chemistry Education curriculum, with potential collaboration with the agricultural engineering curriculum;
2. The needs of students in selecting the MBKM program;
3. A project task analysis to identify problems in partner villages;
4. Business opportunities in the essential oil industry, which has great potential in Aceh; and
5. Current trends in entrepreneurship.

Alumni were surveyed as part of this requirements analysis process to learn about the difficulties they have in the workplace and the capabilities they believe their education lacked (Mustikawati et al., 2016). To learn more about the demands of the labour market, interviews were done with a variety of stakeholders, including representatives from the local chemical industry, academics, and educational authorities. In order to learn more about the goals and worries of final-year students regarding jobs in chemistry, a Focus Group Discussion (FGD) was conducted with them.

The analysis's findings showed how important it is to design courses that meet students' demands for developing their entrepreneurial abilities. With consideration for possible interdisciplinary collaboration, the needs of communities in partner villages, and business opportunities in the essential oil sector—which shows promise in Aceh—the emphasis is on using chemical knowledge to produce economically valuable products from local resources. This comprehensive analysis provides a strong foundation for designing an MBKM course package that is relevant, innovative, and oriented toward real-world needs and local potential in Aceh.

Design Phase

The creation of a thorough prototype is the main goal of the design phase of MBKM course packages intended to encourage an entrepreneurial spirit in aspiring chemistry teachers. The course syllabus, semester learning plan, course contract, student activity sheets, and activity journal (logbook) are some of the main parts of this prototype. Every element is thoughtfully crafted to combine chemistry instruction with entrepreneurship themes, guaranteeing that students may enhance their comprehension of chemistry while gaining real-world business-related skills.

To provide a clearer and more structured picture of how this course package design combines chemistry learning with entrepreneurial skill development, a matrix is presented showing the relationships between key prototype components, chemistry aspects, entrepreneurship aspects, and MBKM activities.

Table 1. Design Matrix of Course Package with Entrepreneurship Development

Prototype Component	Chemistry Aspect	Entrepreneurship Aspects	MBKM activities
Syllabus	Chemical composition analysis of raw materials	- Product development - Marketing strategy	- Analysis of chemical composition of product raw materials - Identification of business product development ideas

Lesson Plan	Application of conventional biotechnology	- Market Analysis - SWOT Analysis	- Conducting market surveys - Product SWOT analysis
Lecture Contract	Expectations for chemistry learning	- Responsibilities in entrepreneurial projects	- Implementation of entrepreneurship programs
Student Activity Sheet	Chemistry practicum related to products	- Product Design - Product Promotion	- Optimal product design - Improved product promotion skills
Activity Journal	Documentation of chemical processes	- Project development documentation	- Community Empowerment in utilizing local potential
Learning Tools	Integration of chemical knowledge	- Business Content	- Development of entrepreneurship-based chemistry learning tools
Evaluation	Understanding of chemical concepts	- Achievements of entrepreneurial projects	- Preparation of final report

The course syllabus and Semester Learning Plan are structured to cover various entrepreneurship aspects related to chemistry, ranging from chemical composition analysis of raw materials to product development and marketing strategies. While student activity sheets and activity journals are intended to direct and record their learning process and the growth of their entrepreneurial projects, the course contract lays out the expectations and duties for each student in this program.

The created prototype depicts a number of tasks that students will complete throughout the MBKM course. These tasks involve determining business product development concepts, applying traditional biotechnology, assessing the chemical makeup of product raw materials, and empowering communities to utilize their local potential. In addition, students will participate in market research, SWOT analysis, optimal product design, and enhancing their abilities in product promotion. The concept also entails creating chemistry learning resources centre on entrepreneurship, which calls on students to apply their understanding of chemistry to a commercial setting. When assessing student accomplishment and the overall impact of the program, the execution of the entrepreneurship program and the creation of the final report become crucial elements.

Development Phase

This project's development phase, which concentrated on thorough validation and field testing, produced outstanding results. The quality and viability of the prototype created for the MBKM course bundle were validated using this procedure. Expert validation was a crucial step that provided academic legitimacy to the prototype. The validation results, which fell into the "*highly valid*" category, indicated that the design and content of the course package met high standards of quality, both in terms of academic substance and relevance to the learning objectives.

The field trials gave important information about how the MBKM program is actually implemented in a real-world setting. The student internships at Universitas Samudra's herbal medicine garden provided practical experience in spotting and creating potential businesses based on regional natural resources, especially in the manufacturing of herbal tea. Students were able to hone their market analysis and product invention skills while putting their theoretical knowledge to use in real-world scenarios.

Additionally, students' experiences were enhanced by the research internships at USK's Center of Excellence for Atsiri Research Centre (PUI ARC), which exposed them to the manufacturing of flagship

goods based on essential oils. In addition to improving the students' technical comprehension, these exercises fostered their inventiveness in product engineering and modification by utilizing raw materials from the Universitas Samudra herbal garden or other readily available natural resources.

The field trial results, which showed that the Learning Outcomes (LO) of research, Course Learning Outcomes (CLO), research and development activities, and designed instruments were successfully implemented, affirmed the prototype's success in achieving its goals. This development stage's success showed that the MBKM course package created is applicable to local potential and industry demands, in addition to being theoretical. Future chemistry teachers will benefit from a comprehensive educational experience focused on practical business applications thanks to the successful integration of technical skills, entrepreneurial concepts, and chemical knowledge.

These findings open the door for the MBKM course package to be implemented more widely. It has the potential to train a new generation of chemistry teachers who are not only capable academically but also have a strong entrepreneurial mindset and set of abilities, especially when it comes to using local natural resources to create high-value economic products.

Implementation Phase

Through the MBKM Student Research mixed internship program, the created course package's implementation step was completed. Using their understanding of chemistry, the participating students created a number of inventive goods in Gampong Rambong Payong, Peusangan Siblah Krueng District. Utilizing moringa leaves and household garbage to create products like Eco Enzyme and wholesome noodles produced from local vegetables was the primary goal of the activities. In addition to product development, this implementation approach includes students in marketing-related activities, such as using e-commerce sites like Shopee.

According to this strategy, the growth of socio-technopreneur ship, which is founded on social missions and the adoption of technology, can boost national economic growth, foster innovation, decrease social problems, increase market access through technology, generate new job opportunities, and accelerate the development of entrepreneurship (Kurniawan & Nurachadijat, 2023). In order to show how chemistry expertise, technology know-how, and an entrepreneurial spirit can be combined to empower communities, students also planned product expos and trained members of the community as part of the program.

Regular assessments were carried out to track development and pinpoint problems, and students, supervising instructors, and local partners worked together to find answers. By offering hands-on experiences that enhanced students' comprehension of the use of chemistry in business and community development, these activities aimed to improve the link with the chemistry education curriculum. In order to make sure that the application of this approach not only met academic objectives but also significantly benefited the community, regular reflections were conducted to evaluate the program's effects on student learning and local economic development.

Evaluation Phase

The evaluation stage of the development of the MBKM course package aimed at fostering an entrepreneurial spirit among pre-service chemistry teachers showed very positive results. Based on a survey conducted among the participating students, the main goals of the MBKM activities were effectively met. Five out of six students said the program was successful in fostering their entrepreneurial spirit, and most respondents reported learning new things and gaining new insights. The benefits of the curriculum in creating tangible products—a crucial aspect of entrepreneurship—were recognized by all responders.

The MBKM program also successfully developed various important soft skills. Students reported gains in leadership, time management, communication, and environmental adaption. The program's beneficial effects on social elements are demonstrated by the fact that over half of the respondents said they felt more connected to the community and had a greater feeling of social responsibility. Students' creativity and innovation were also fostered by the MBKM activities; according to multiple respondents, they were

able to hone their creative faculties and make better use of natural resources, which was evident in a variety of business ventures, from opening seafood restaurants to creating transparent soap and inventive drinks.

The results of this study indicate that the MBKM program has succeeded in helping students develop a number of important soft skills, including communication skills, in addition to an entrepreneurial spirit. These results support several previous studies such as research conducted by Suwanti et al., (2022) which revealed that better communication allows them to engage more effectively. both on and off campus. Research by Rahmawanti & Nurzaelani, (2022); Vebrianto et al. (2024) which states that in addition to learning how to communicate ideas accurately and clearly, students also learn how to understand other people's opinions, which is an important skill both in the social and professional realms.

The results of the study also found that this program was able to increase the capacity for environmental adaptation. In relation to the research of Arsyad & Widuhung, (2022) students learn to be more adaptive and sensitive to change by facing new challenges in various situations and conditions. This is important in today's fast-paced and dynamic world 022). They are better prepared to adapt to the often-unstable work environment thanks to these adaptation skills, which give them greater confidence when faced with various situations (Suwanti et al., 2022).

Leadership also becomes one of the soft skills developed through this program (Kuncoro et al., 2022). Students are given the chance to plan events, take charge of projects, and accept accountability for their choices. They gain hands-on experience in resource management and team leadership, which boosts their confidence when they take on greater responsibility in the future (Rahmawanti & Nurzaelani, 2022; Kuncoro et al., 2022).

Another area that this program improves is time management (Rahmawanti & Nurzaelani, 2022; Rahman et al., 2022). Students are compelled to successfully manage their time in order to finish assignments without sacrificing other aspects of their lives due to the several activities that are going on at the same time (Syaputri & Suyasa, 2023). This ability will be especially helpful in their future professional endeavours and in managing priorities in their daily lives.

Beyond soft skills enhancement, this program also positively impacts students' relationships with society (Chelsya & Wirianata, 2022). Students gain a feeling of social awareness and strengthen their ties to the communities they live in by actively participating in social activities. They develop empathy and a sense of social responsibility as a result of learning about the demands and difficulties that society faces (Pramesti & Hendrik, 2021). Students' ties to the community are strengthened by this experience, which also motivates them to take an active role in resolving social issues. All things considered, this curriculum not only improves students' professional abilities but also moulds them into more compassionate, flexible people who are equipped to handle obstacles in the future.

The implications of this research are that implementing MBKM course packages has the potential to make a significant impact on entrepreneurial skill development among pre-service teachers. The success of the program highlights the need for more business and education integration so that aspiring educators can become more creative changemakers in communities and schools. To increase the advantages of other subjects, similar courses can be expanded.

The novelty of this study lies in the innovative integration of chemistry learning with entrepreneurship development in the MBKM curriculum, which connects chemistry knowledge with local potential and industry in Aceh, especially in the processing of essential oils and natural resource-based products. This provides a practical approach for prospective chemistry teachers to not only understand chemistry concepts theoretically, but also apply them in the context of business and community development. However, this study has several limitations, such as the limited scope of the trial to a small number of students and certain locations, which may affect the generalization of the results to a wider context. In addition, although the results show significant development of soft skills, the long-term impact on alumni careers and entrepreneurship has not been ascertained. Therefore, further research is recommended to expand the sample, involve more industry sectors, and conduct further monitoring to measure the long-term impact of this program on the development of entrepreneurship and the profession of chemistry educators.

CONCLUSION

According to the research findings, the MBKM course package's methodology is successful in improving students' entrepreneurial abilities, especially for pre-service chemistry teachers. After participating in this program, there is a significant increase in motivation and interest in entrepreneurship among students. Additionally, the program successfully encouraged students to pursue research topics based on their hands-on experiences during the program's implementation, demonstrating a strong synergy between practical and academic activities. These evaluation results confirm that the MBKM program is capable of preparing pre-service chemistry teachers with solid entrepreneurial skills, while also identifying several areas for future improvement, such as strengthening collaborative aspects and enhancing the program's relevance to the industrial world. The research's recommendations include a number of crucial areas for future advancement. Firstly, in order to give students a better understanding of the entrepreneurial world, the created MBKM program should first continue to broaden its scope and be reinforced by partnerships with pertinent industries. Secondly, given that many students are motivated to investigate research issues as a result of their program experiences, educational institutions ought to take the initiative to provide research facilities and support. Providing adequate infrastructure and resources, such as entrepreneurship laboratories, e-learning platforms, and mentorship networks, is also crucial to ensure that students receive an optimal learning experience. Additionally, periodic evaluations are recommended to ensure that this program is still applicable to the dynamics of education and entrepreneurship and that it can handle upcoming challenges. With continuous updates and improvements, this program is expected to become a comprehensive and effective learning model for fostering an entrepreneurial spirit among pre-service chemistry teachers..

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REFERENCES

Amankwaah, D., Appiah-twumasi, E., Ateko, K. D., & Asamoah, Y. D. (2024). Efficacy of ADDIE Instructional Design in Promoting Conceptual Change in Electronic Concepts at Tano-North Municipality , Ghana. *Schrödinger: Journal of Physics Education*, *5*(3). https://doi.org/10.37251/sjpe.v5i3.1064

Andari, S., Windasari, W., Setiawan, A., & Rifqi, A. (2021). Student exchange program of merdeka belajar-kampus merdeka (MBKM) in Covid-19 pandemic. *JPP (Jurnal Pendidikan Dan Pembelajaran)*, *28*(1), 30–37.

Arsyad, A. T., & Widuhung, S. D. (2022). Dampak merdeka belajar kampus merdeka terhadap kualitas mahasiswa. *Jurnal Al Azhar Indonesia Seri Ilmu Sosial*, *3*(2), 443085.

Chelsya, C., & Wirianata, H. (2022). Persepsi Mahasiswa terhadap Kebijakan Kurikulum Merdeka Belajar Kampus Merdeka (MBKM). *YUME: Journal of Management*, *5*(3), 387–401.

Fadillah, F.-, Zelmiyanti, R., Irianto, D., & Riadi, S. (2024). CDIO Framework: A Solution of The Project-Based Learning Problem in Accounting Study Program. *Journal of Applied Managerial Accounting*,

8(1), 146–155. https://doi.org/10.30871/jama.v8i1.7379

Hasibuan, S., Chu, C. T., & Godh, W. A. (2024). Enhancing Creative Thinking in Circle Topics through the Realistic Mathematics Learning Approach. *Interval: Indonesian Journal of Mathematical Education*, *2*(2), 52–60. https://doi.org/10.37251/ijome.v2i2.1148

Jr, E. F. M. (2024). Enhancing Student Learning Motivation in Physics Through Interactive Physics Education Technology (PhET) Simulation. *Schrödinger:Journal of Physics Education*, *5*(3). https://doi.org/10.37251/sjpe.v5i3.1025

Khamimah, W. (2021). Peran kewirausahaan dalam memajukan perekonomian Indonesia. *Jurnal Disrupsi Bisnis*, *4*(3), 228–240.

Kuncoro, J., Handayani, A., & Suprihatin, T. (2022). Peningkatan soft skill melalui kegiatan merdeka belajar kampus merdeka (MBKM). *Proyeksi*, *17*(1), 112–126.

Kurniawan, F. S., Winarni, E., Retnandari, S. D., & Widilestari, C. (2023). Pemberdayaan Masyarakat melalui Pelatihan Soft Skill Digital Marketing di Desa Kemujan Kecamatan Karimunjawa. *Manggali*, *3*(1), 1–10.

Kurniawan, J., & Nurachadijat, K. (2023). Implementasi Pendidikan Kewirausahaan dalam Menumbuhkan Keterampilan pada Peserta Didik Madrasah Ibtidaiyah. *Journal on Education*, *6*(1), 406–419.

Lenggogeni, P., Fitri, Y., Gistituati, N., & Bentri, A. (2024). Analisis Implementasi Kurikulum Merdeka Di Perguruan Tinggi: Universitas Andalas. *Ekasakti Jurnal Penelitian Dan Pengabdian*, *4*(1), 40–49.

M, M. B., & Adeshina, A. N. G. (2024). Exploring the Effectiveness of Moodle Activities in Enhancing EFL Learning for Yemeni Teachers. *Interval: Indonesian Journal of Mathematical Education*, *8*(07), 4177–4187. https://doi.org/10.18535/sshj.v8i07.1183

Mahanal, S. (2014). Peran guru dalam melahirkan generasi emas dengan keterampilan abad 21. *Seminar Nasional Pendidikan HMPS Pendidikan Biologi FKIP Universitas Halu Oleo*, *1*, 1–16.

Muis, A., Pholboon, M., & Kamali, A. N. (2024). Geomics as Interactive Geography Learning Media : A Development Study on Environmental Material in High Schools. *Journal of Educational Technology and Learning Creativity*, *2*(2), 63–71. https://doi.org/10.37251/jetlc.v2i2.1089

Mustikawati, R. I., Nugroho, M. A., Setyorini, D., Yushita, A. N., & Timur, R. P. (2016). Analisis Kebutuhan Soft Skill dalam Mendukung Karir Alumni Akuntansi. *Jurnal Pendidikan Akuntansi Indonesia*, *14*(2).

Nuraeni, Y. A. (2022). Peran pendidikan dalam pembentukan jiwa wirausaha: Pendidikan kewirausahaan. *Jurnal Ilmu Pendidikan (ILPEN)*, *1*(2), 38–53.

Pramesti, D., & Hendrik, M. (2021). Praktik Berwirausaha Secara Daring dalam Pembelajaran Kewirausahaan pada Mahasiswa. *Edukatif: Jurnal Ilmu Pendidikan*, *3*(6), 4605–4613.

Pratiwi, C. P., Sasongko, A. H., Aguzman, G., Wibawa, R. C., & Pambudy, R. (2022). Characteristics and Challenge Faced By Socio-Technopreneur in Indonesia. *Business Review and Case Studies*, *May*.

https://doi.org/10.17358/brcs.3.1.13

Purwowidodo, A., & Zaini, M. (2023). Teori dan Praktik Model Pembelajaran Berdiferensiasi Implementasi Kurikulum Merdeka Belajar. In *Yogyakarta: Penebar Media Pustaka* (Vol. 65).

Rahmawanti, M. R., & Nurzaelani, M. M. (2022). Dampak Program Merdeka Belajar Kampus Merdeka Bagi Peningkatan Soft Skills Dan Hard Skills Mahasiswa Fkip Universitas Ibn Khaldun Bogor. *Educate: Jurnal Teknologi Pendidikan*, *7*(1), 37–47.

Sintiawati, N., Fajarwati, S. R., Mulyanto, A., Muttaqien, K., & Suherman, M. (2022). Partisipasi civitas akademik dalam implementasi merdeka belajar kampus merdeka (MBKM). *Jurnal Basicedu*, *6*(1), 902–915.

Sopiansyah, D., Masruroh, S., Zaqiah, Q. Y., & Erihadiana, M. (2022). Konsep dan implementasi kurikulum MBKM (merdeka belajar kampus merdeka). *Reslaj: Religion Education Social Laa Roiba Journal*, *4*(1), 34–41.

Sumual, J., & Maramis, J. B. (2022). Urgensi entrepreneurship education bagi mahasiswa perguruan tinggi. *Jurnal Pembangunan Ekonomi Dan Keuangan Daerah*, *23*(1), 1–13.

Suryaman, M. (2020). Orientasi pengembangan kurikulum merdeka belajar. *Seminar Nasional Pendidikan Bahasa Dan Sastra*, 13–28.

Suwanti, V., Suastika, I. K., Ferdiani, R. D., & Harianto, W. (2022). Analisis Dampak Implementasi Program Mbkm Kampus Mengajar Pada Persepsi Mahasiswa. *JURNAL PAJAR (Pendidikan Dan Pengajaran)*, *6*(3), 814. https://doi.org/10.33578/pjr.v6i3.8773

Syaputri, P. M., & Suyasa, P. T. Y. S. (2023). Gambaran Perilaku Mengelola Waktu Pada Mahasiswa Peserta MBKM Studi Independen. *Phronesis: Jurnal Ilmiah Psikologi Terapan*, *12*(2), 162–171.

Vebrianto, R., Hermita, N., Irawan, D., Mujtahid, I. M., & Thahir, M. (2024). Teachers' experiences in sekolah penggerak program: a retrospective case study. *Journal of Education and Learning*, *18*(1), 79–88. https://doi.org/10.11591/edulearn.v18i1.20908

Wahyuni, S., & Widiarti, N. (2010). Penerapan pembelajaran berbasis masalah berorientasi chemo-entrepreneurship pada praktikum kimia fisika. *Jurnal Inovasi Pendidikan Kimia*, *4*(1).

Wardhani, P. S. N., & Nastiti, D. (2023). Implementasi pendidikan kewirausahaan dalam menumbuhkan minat berwirausaha mahasiswa. *Prima Magistra: Jurnal Ilmiah Kependidikan*, *4*(2), 177–191.