REVIEW ARTICLE

Analysis of "Merdeka Belajar - Kampus Merdeka" program research in Scopus indexed journals: A critical review

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Abstract: The "Merdeka Belajar - Kampus Merdeka" (MBKM) program emphasizes learning relevant to the needs of workplace so that students can compete with their abilities. However, the lack of information regarding MBKM is an important note. The research aims to analyze and review Scopus-indexed MBKM documents critically. The research focus is research trends, crucial information, and research recommendations. The research method used is a Systematic Literature Review (SLR) supported by the VOSViewer application. SLR evaluates and analyzes documents systematically and VOSViewer visualizes relevant document results. Documents described from 2021 to 2024. The number of articles used was 29. The research results show that the number of documents related to MBKM has increased, indicating the great attention of researchers to this program. The MBKM program received a positive response from institutions and students. However, several aspects of implementing the MBKM program still require more attention. The bibliometric visualization results show that several clusters are not directly related to the MBKM program, which provides opportunities for future study. Apart from that, the quality of learning needs to be improved through various learning activities so that student's skills and abilities can be empowered more optimally, preparing them to face increasingly rapid developments.

Keywords: curriculum; learning model; learning technology media; Merdeka Belajar Kampus Merdeka

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Introduction

Suitability of educational programs with the business world is the main challenge in realizing a developed country in the era of Industrial Revolution 4.0 (Jardim et al., 2021; Ortiz-de-Montellano et al., 2023; Qureshi & Mian, 2021). The Merdeka Belajar - Kampus Merdeka (MBKM) aims to prepare future generations by improving the quality of learning to maximize student competency by industry needs (Abdullah et al., 2023; Heriyadi et al., 2023). The current learning process must facilitate the acquisition of knowledge, skills and attitudes relevant to the demands of the world of work so that students can compete with the necessary abilities, creativity and innovation (Valūnaitė-Oleškevičienė et al., 2019). The MBKM policy requires each school to adapt educational procedures and curriculum (Ariefah & Nugraheni, 2023; Heriyadi et al., 2023; Pujiharsono et al., 2023). This adjustment directly impacts the implementation of the learning process and the achievement of learning objectives. Furthermore, classroom learning must be relevant to industry needs because graduates are expected to have competencies that suit the demands of the world of work. Therefore, the learning process implemented must encourage students' abilities (Cahya et al., 2023; Sari et al., 2024; Usman et al., 2021; Usman, Eurika, Priantari, et al., 2023). Furthermore, to encourage students' abilities, there are eight learning activities: internship or work practice activities, humanitarian project learning activities, teaching activities at school, entrepreneurial activities, and entrepreneurial activities (Mursitama et al., 2022).

However, in reality, many students experience difficulties getting jobs because their competencies do not match the job requirements they are applying for. One of the contributing factors is the lack of space for students to develop skills and potential independently during the learning process (Léger et al., 2011).This can be seen from the lack of innovation and collaboration in the learning process and the minimal use of technology (Patil et al., 2023; Usman, Eurika, & Priantari, 2023). Learning cannot be said to be practical, flexible, and relevant to the industry's needs, which is why the MBKM program was created.

Many teachers also face difficulties implementing learning models (Chang et al., 2023; Y.-T. Lin, 2019). This challenge is reflected in the importance of providing meaningful learning to students, which impacts students' limited ability to become independent learners (Park & Kim, 2022). Therefore, greater efforts are needed to improve the quality of learning to the demands of increasingly advanced times and prepare students to become competent and ready to compete in the ever-growing world of work.

The development of MBKM research at Scopus is that there are several types of research, for example, quantitative research (Harlanu et al., 2024; Prahani et al., 2023) and qualitative research (Gunarso et al., 2023; Muflihin & Warsito, 2023; Muslihati et al., 2023). However, until now, there has been no analysis in the literature review that focuses on MBKM. Therefore, analyzing documents indexed in the Scopus database regarding the MBKM Program is very important. The objectives of this research are: 1) identify document trends related to MBKM, 2) reveal important information about the MBKM program, and 3) provide research recommendations regarding the MBKM program. Research recommendations will be visualized bibliometrically using VOSviewer.

Method

This research method uses a Systematic Literature Review (SLR) with support from the VOSViewer application. SLR is used to systematically find, evaluate and analyze documents, while VOSViewer visualizes documents that meet research criteria. This aims to produce comprehensive investigation results (Susetyarini & Fauzi, 2020) and present a picture of relevant information to the research subject. Research steps include: 1) formulating research questions to establish a clear scope and focus, 2) searching for documents by establishing inclusion and exclusion criteria, and 3) visualizing the results of documents that meet the criteria. Document searches were carried out using the phrase "MBKM" in the SCOPUS database search, with search criteria including document type, year of publication, source type, and language. Selection criteria were based on the PRISMA (Usman et al., 2024). Inclusion and exclusion procedures are arranged according to the description provided in the research, as described in Figure 1. Documents collected in RIS format are then analyzed using VOSViewer. The analysis steps include: 1) selecting the data type to create a map based on bibliographic data, 2) selecting the data source to read data from the reference manager file, 3) selecting the RIS file, 4) selecting the analysis type and calculation method, 5) setting the threshold limit for the minimum number of keyword occurrences, and 6) determine the number of keywords to be selected (Husaeni & Nandiyanto, 2023).

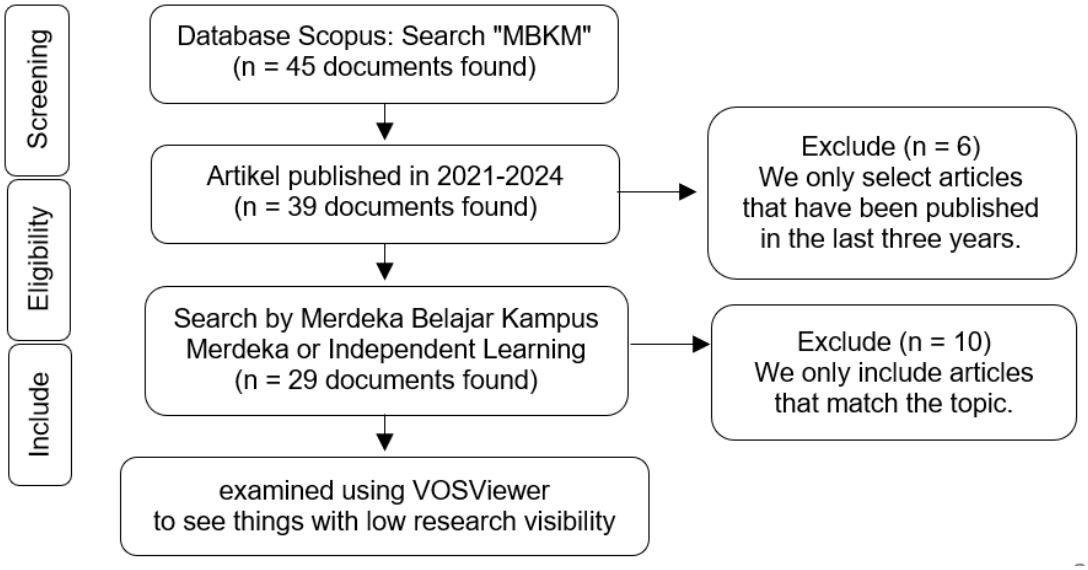

Figure 1. Review process for study selection

The screening process began with the screening stage, where the Scopus database was used to search

for documents with the keyword "MBKM", and 45 documents were found. Only documents published between 2021 and 2024 were selected in the eligibility stage, resulting in 39 documents after excluding six that did not fit into that time range. Next, at the included stage, a search was conducted using the keywords "Merdeka Belajar Kampus Merdeka" or "Independent Learning", producing 29 relevant documents. Ten documents were excluded in this stage because they did not fit the specified topic. The remaining documents were then examined using VOSViewer to identify areas with low research visibility.

Results and Discussion

The results and discussion cover three main aspects, namely, an analysis of MBKM research trends, a summary of important information from MBKM research, and patterns and developments in MBKM research. These three aspects are essential for understanding and evaluating the MBKM program.

MBKM Research Trend Analysis

The line graph depicts the trend in publishing MBKM documents over the last three years. The line graph shows the number of document variations released between 2021 and 2024. More detailed information can be seen in Figure 2.

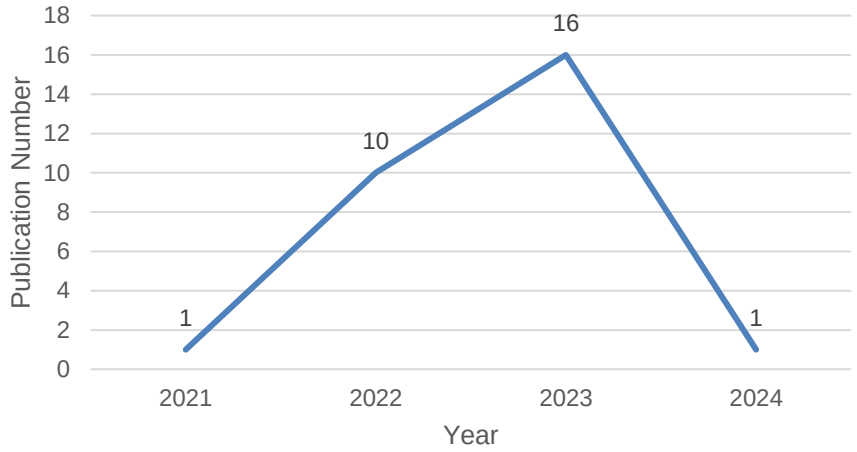

Figure 2. Trends in the number of MBKM documents

Figure 2 shows the number of documents related to MBKM published in the last three years, showing fluctuations up and down. In 2021, one document was published. In 2022, there were ten documents published. In 2023, sixteen documents will be published. In 2024, one document was published precisely when this research was conducted, namely in early 2024, so there may be additional documents. The increasing number of documents published shows the growing focus of academics on the MBKM program. This indicates that researchers are paying attention to the MBKM program. One of them is the entrepreneurship program (Wijaya & Mustikarini, 2024). Furthermore, the results of implementing the MBKM program include the impact of the MBKM program on students' hard and soft skill levels (Syamsulrizal et al., 2024) and the quality of education in schools (Abubakar et al., 2024).

Summary of Important Information from Research Results related to MBKM

The results of an in-depth systematic review of documents are divided into authors, important information, and number of citations. This study provides more detailed information for understanding research progress related to the MBKM program in the education sector. Table 1 provides a more comprehensive picture and a well-organized data representation.

Several MBKM programs from the results of a systematic literature review are presented in Table 1, namely certified internships reported by Tuasikal et al. (2021). Independent studies reported by Abdullah, et al. (2023), Ahdhianto et al. (2022), Ariefah and Nugraheni, (2023), Budiarti et al. (2023), Prahani et al. (2023), Rahmadi et al. (2023), and Sa'diyah et al. (2022). Teaching campuses were reported by Pramono et al. (2022), Suhud et al. (2023), and Sumani et al. (2022). Independent student exchanges were reported by Dewi et al. (2023). Building villages (Thematic KKN) was reported by Prabawati et al. (2023). Humanitarian project reported by Suyadi et al. (2022). Furthermore, the implementation of the MBKM program gave positive results reported by Mursitama et al. (2022), Suharno et al. (2023), Uddin et al. (2022), as well as Zubair and Amir, (2023). However, there are still several things in the MBKM program

that need to be taken into account in implementation, as reported by Heriyadi et al. (2023), Hestyrosari and Damayanti, (2023), Muflihin and Warsito, (2024), Muslihati et al. (2023), Siregar et al. (2023), and Supriyoko et al. (2022). Furthermore Ahyanuardi et al. (2023), Gunarso et al. (2023), Pujiharsono et al. (2023), as well as Zulhalim and Wibowo, (2022) stated that it is necessary to develop instruments to measure the implementation of MBKM.

Table 1. Important information regarding the MBKM program

Author	Important information regarding documents	Cites
(Tuasikal et al., 2021)	The research results show that the teaching internship introduction program is impractical. Even though teaching skills have significantly increased, the learning process is ineffective. Students experience busy teaching schedules, leaving little time for personal development. It is recommended that the internship duration be extended to provide more valuable experience in managing and adjusting the teaching load.	4
(Ahdhianto et al., 2022)	The research results show that the web-based PBL learning model is practical and effective in improving student learning outcomes. After implementing this learning model, there is a significant difference in increasing student learning outcomes.	0
(Mursitama et al., 2022)	The research results show that student responses to implementing MBKM activities in student learning are very positive, with 97% stating that the program can develop the competencies and skills needed to work after graduation.	3
(Pramono et al., 2022)	A valid instrument was created to measure and intervene in knowledge exchange to the needs of Indonesian lecturers and the academic culture in Indonesian universities. This instrument can guide policymakers in evaluating and designing interventions that meet the intent of knowledge sharing among faculty members. Future research should expand the scope to explore knowledge-sharing intentions across different regions in Indonesia, considering the varying personal characteristics and academic culture among lecturers from multicultural backgrounds.	1
(Suyadi et al., 2022)	The research results highlight that university study programs and faculties only recognize the activities of COVID-19 student ambassadors related to specific subjects. This shows that the bureaucracy in higher education institutions has lost its human aspect and is not providing fair treatment to student ambassadors for COVID-19. The implications of this research finding are a sharp criticism of the decline in human values in the tertiary environment.	5
(Uddin et al., 2022)	The survey results show student interest in the MBKM program, where 68% of students are very interested, 28% show moderate interest, and 4% are not interested.	3
(Sa'diyah et al., 2022)	The research results show that MBKM has improved the performance of Ibnu Khaldun University Bogor, with an average percentage of assessment criteria above 75%. The main focus of improvement is increasing students' soft and hard skills, as well as lecturers' capacity and expertise. Therefore, implementing MBKM, which has been proven to increase graduate learning achievement, must be maintained.	3
(Supriyoko et al., 2022)	Based on the research results, it was found that students, lecturers, and staff responded positively to the implementation of MBKM. However, training, mentoring, or team teaching is required to create material or program implementation modules. Universities must build internal systems like websites to accommodate information, share data, and support the MBKM program. Apart from that, there is a need for training for study programs, supporting lecturers, guardian lecturers, and students to increase understanding of the implementation of MBKM.	2
(Mualimin, 2022)	Based on the questionnaire results, students assessed the teaching and learning process in the English department as very good, especially in terms of their satisfaction while studying in MBKM. However, students often face internet connection instability during lectures due to blank spots and technological problems.	0
(Zulhalim & Wibowo, 2022)	The result of this research is a Knowledge-Sharing System (KSS) design, which was developed by applying the User-Centered Design (UCD) and Soft System Methodology (SSM) methods. This design can collect and analyze data from various stakeholders to support the implementation of MBKM policy	0

Author	Important information regarding documents	Cites
	in Indonesia.	
(Sumani et al., 2022)	The research results showed differences in the level of social skills between students who took part in the program and those who did not. It is hoped that the implications of these findings can become a basis for institutions to encourage student participation in teaching programs on campus and support the success of MBKM program.	0
(Suhud et al., 2023)	The research results show that the model or algorithm used in the Teaching Campus program has an accuracy rate of 77.45%. This means that around 77.45% of the predictions the model makes correspond to the actual categories or sentiments of the observed data. Additionally, the micro average of 77.45% shows that this model can consistently identify overall sentiment. The precision level of 81.46% shows how accurate the model is in classifying positive data. In comparison, the recall level of 77.45% shows how well the model can identify overall positive sentiment from all available positive data.	0
(Prahani et al., 2023)	The research results show that the PLW-based dHOOTLearn model, assessed by experts, has sufficient quality to improve CTS in undergraduate physics education programs. To improve CTS, lecturers must organize structured and disciplined teaching and learning activities using the PLW-based dHOTPelajar paradigm. The importance of creating an effective learning environment and learning media to support every step taken by lecturers and students in implementing the PLW-based dHOTPelajar model was evaluated in this research.	0
(Budiarti et al., 2023)	The research results are hoped to show that using VR technology in simulations is an effective solution to support more interesting online learning for students as an integral part of MBKM program.	0
(Ariefah & Nugraheni, 2023)	The research results show that Naïve Bayes's performance using the Laplace Estimator produces an accuracy value of 80.20%, precision of 82.00%, and recall of 79.00%. Meanwhile, Naïve Bayes's performance without the Laplace Estimator produces an accuracy value of 77.00%, precision of 80.00%, and recall of 74.00%. Overall, Naive Bayes, with the Laplace Estimator, achieves the highest scores in all metrics.	0
(Pujiharsono et al., 2023)	Fuzzy logic is an assessment method to select competent students to participate in the MBKM program. A Fuzzy Inference System with rules using the Fuzzy method is used in decision-making systems. The result of this selection is the score for each student, which is 0-100.	0
(Dewi et al., 2023)	The findings of this research indicate that the PERMATA-SAKTI program can strengthen cultural and civic literacy for pre-service EFL teachers by introducing culture and diversity through the online learning process. This inclusive learning approach expresses solidarity, tolerance, diversity and unity. EFL pre-service teachers can develop attitudes of mutual respect through a dynamic learning process involving diverse languages, races, ethnicities, religions, and worldviews.	0
(Ahyanuardi et al., 2023)	Findings from the needs analysis of expert system-based assessment models show that the results are necessary. This conclusion is in line with the results of observations and interviews, which indicate that there are still problems in learning activities, assessment, and implementation of MBKM, which require the development of better assessment models. Therefore, this research suggests that the latest technology be considered for the MBKM assessment.	0
(Rahmadi et al., 2023)	Emancipation learning in the MBKM at the university level is integrated through final assignments, practical experience, and structured assignments related to learning outcomes in some subject regions (embedded learning). Outcomes-based multi-stakeholder education matching programs for higher education are an approach that can address the education SDGs.	0
(Gunarso et al., 2023)	The research results were analyzed using the Partial Least Square-Structural Equation Model (PLS-SEM) method, and it was found that the factors that encourage MBKM participation are social influence, supporting factors, government decisions, utility, and recognition. However, further analysis showed that convenience factors and financial incentives did not influence participation.	0
(Muslihati et al., 2023)	The research results show the need for improvements in the MBKM program to improve the learning experience for students, university management, industry partners and education policymakers in Indonesia.	1

Author	Important information regarding documents	Cites
(Abdullah et al., 2023)	The research results show that compared to the PJBL model, students who use the MBKM model based on Industry-Based Learning (WBL) achieve higher learning outcomes regarding relevance to industrial concepts, skills, and attitudes.	1
(Hestyrosari & Damayanti, 2023)	This research aims to identify factors that support the successful performance of Project Management (PMO) at PT XYZ in the context of the MBKM project. Three key factors must be considered: strategy, operations, and project performance.	0
(Prabawati et al., 2023)	The report states that students need to understand the concept of management and how to use the system to implement KKN-T project activities in villages to achieve the expected goals.	0
(Siregar et al., 2023)	The questionnaire results revealed that 4% of respondents expressed a lack of information about the MBKM program, which impacted their non-participation. This may cause a lack of student interest in the MBKM program. Therefore, to increase understanding of the MBKM program, this research suggests designing an online media application.	0
(Zubair & Amir, 2023)	The research results show that six Islamic Religious Universities (PTKI) in South Sulawesi, consisting of Leaders, Lecturers, and Students, responded positively to the Independent Campus Policy. This indicates an excellent response to the policy. Research also shows that improving the hard and soft skills of students in the region is an opportunity for PTKI to produce quality graduates. However, obstacles include campus financial burdens, increasing lecturer workload, administrative complications, and student study costs.	0
(Suharno et al., 2023)	The MBKM program provides various facilities that support the strengthening of multiculturalism, such as student exchanges, Center of Excellence (CoE) facilitation, and equitable education for all.	0
(Heriyadi et al., 2023)	The research results reinforce the importance of technical and managerial competencies and essential soft skills. Emphasizes that lecturers must have teaching skills and expertise in their specific fields. In addition, cooperation between industry and the education sector is critical. There is a need to develop a Relevant Competency Curriculum (MBKM), which includes curriculum design, learning activities that align with industry needs, tools for implementing MBKM, and adequate socialization about MBKM. Only 46.3% of students graduated on time, and 77.1% found employment. Language proficiency was considered a challenge, with 30.4% facing difficulties in a foreign language. Personality aspects are deemed necessary by 93% of employers, and research shows a high demand for practical learning experiences, especially in the laboratory, at 85%. The overall Learning Experience Assessment resulted in a score of 78%.	0
(Muflihin & Warsito, 2024)	The review results show that demographic factors influence the digital divide, where people in rural areas have lower ICT scores than people in urban areas.	0

Students respond positively to the MBKM program because it can develop skills, one of which is social skills (Heriyadi et al., 2023; Mursitama et al., 2022; Siregar et al., 2023; Supriyoko et al., 2022; Zubair & Amir, 2023). Social skills can help students become more competent, adaptable, and ready to compete in an increasingly interconnected global environment (Bach, 2016; Ran et al., 2021; Sail & Alavi, 2010; Tawankanjanachot et al., 2024). Furthermore, MBKM allows students to participate in many activities, projects, and partnerships to improve communication, teamwork, leadership, and tolerance skills (Hestyrosari & Damayanti, 2023; Prabawati et al., 2023). MBKM also encourages student engagement with various learning environments and communities, encouraging the development of empathy, flexibility, and the capacity to operate in multicultural environments (Abdullah et al., 2023; Rahmadi et al., 2023; Suharno et al., 2023).

On the other hand, the research results show that the teaching internship introduction program still needs attention. This is caused by limited time for students' self-development, so the experience students gain is still less meaningful (Tuasikal et al., 2021). Therefore, improvements are needed, such as training, mentoring, or team teaching in creating material or program implementation modules and increasing internet stability (Muslihati et al., 2023; Sa'diyah et al., 2022).

Training, mentoring, and team teaching are closely related to the MBKM program and are important methods for increasing learning effectiveness and developing student abilities. By providing training, educators can gain the knowledge and abilities to create and implement innovative and student-centered learning (Brick et al., 2021; J.-L. Lin et al., 2023; Ma, 2021; Yao et al., 2022). Mentoring is crucial to

guide and support students in developing academic and professional abilities (Sun et al., 2023). Team teaching facilitates collaboration between academics, industry practitioners, and professionals capable of enhancing student learning experiences (Alfaro et al., 2023; Clark et al., 2021; Graham, 2022; Minett-Smith & Davis, 2020; Struyf et al., 2022). Improving training, mentoring, and team teaching can offer comprehensive and integrated learning methods that equip students to meet the demands of a dynamic and evolving work environment. Using these tactics can ensure that students receive sufficient and relevant support throughout their education, enabling them to develop skills and competencies that are important for future achievement.

PBL-based learning models via web platforms, PLW-based dHOOTLearn models, VR technology, PERMATA-SAKTI programs, Industry-Based Learning (WBL), and multi-stakeholder programs can address educational SDGs and encourage the achievement of academic abilities in terms of relevance to concepts, skills, and industry attitude so that it is proven to be practical and effective (Abdullah et al., 2023; Ahdhianto et al., 2022; Budiarti et al., 2023; Dewi et al., 2023; Prahani et al., 2023; Rahmadi et al., 2023). Therefore, implementing MBKM requires the development of good learning and assessment models.

Models such as Project-Based Learning (PBL), Problem-Based Learning (PjBL), and Cooperative Learning (CL) can improve students' teamwork, problem-solving and creativity abilities (Mellon et al., 2017; Rieg et al., 2024; Xu et al., 2022). Learning technology media can increase the accessibility and effectiveness of learning while enriching students' learning experiences (Bacci et al., 2023; Sinclair et al., 2015; Stephens et al., 2019). Technology can enhance distance learning, encourage collaboration and include external learning materials to expand the reach and availability of education (Chen & Konomi, 2022; Masalimova et al., 2021).

Future research should broaden the scope to explore different types of knowledge, considering variations in personal characteristics and academic culture. In addition, the review results show that demographic factors influence the digital divide, where people in rural areas have lower ICT scores than people in urban areas.

Patterns and Development of MBKM Research

MBKM research patterns and developments were identified by analysing twenty-nine documents examined using VOSViewer. This analysis aims to identify areas with low research visibility to identify future research opportunities. The results of the analysis present several clusters, where each cluster consists of several topics that are relevant to the research topic (Figure 3). These clusters reflect the diversity of issues discussed in the literature, such as learning models, curriculum, learning technology, and socio-culture. Cluster analysis provides a deeper understanding of the trends and focus of existing research and identifies significant or significant relationships between items. Thus, this research makes an important contribution to guiding future research directions in higher education and innovative learning.

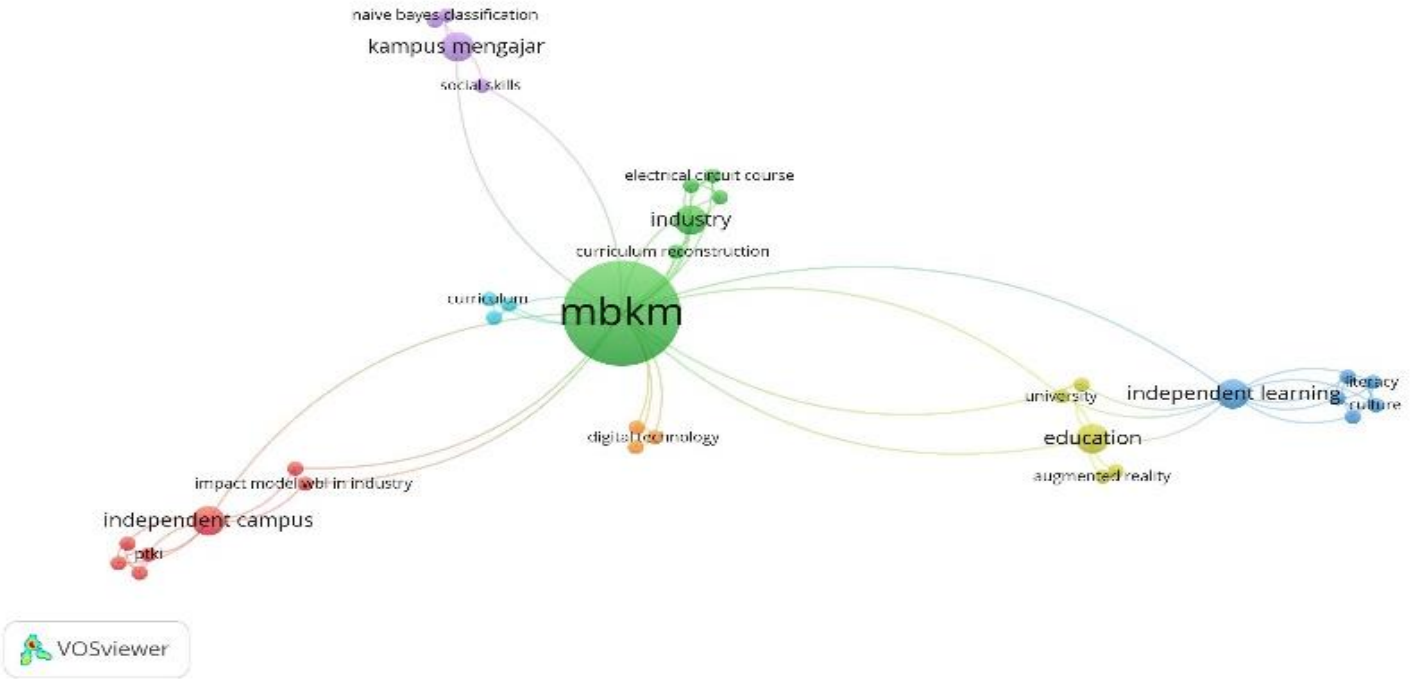

Figure 3. Visualization of the MBKM management network

Cluster 1 focuses on various topics, including the Impact Model WBL in industry, independent campus, PJBL (Project-Based Learning), PTKI (Islamic Higher Education Institutions), response, South Sulawesi, and superior scholars. Cluster 2 encompasses themes such as assessment, curriculum reconstruction, the electrical circuit course, expert systems, industry, and MBKM. Cluster 3 revolves around citizenship, culture, EFL (English as a Foreign Language) teachers, independent learning, literacy, and student exchange. Cluster 4 includes discussions on augmented reality, education, online learning, participation, and the university. Cluster 5 explores topics such as Kampus Mengajar, naive Bayes classification, sentiment analysis, and social skills. Cluster 6 focuses primarily on curriculum-related aspects, Laplace estimator, and naive Bayes. Cluster 7 addresses digital technology, ICT (Information and Communication Technology), and the industrial era 4.0.

This network visualization illustrates the relationships between items revealed using cluster analysis. This visualization can provide a deeper understanding of the relationship between items in interconnected research documents and help recognize trends and patterns that subsequent researchers have not noticed. More details can be seen in Figures 4, Figure 5, Figure 6 and Figure 7.

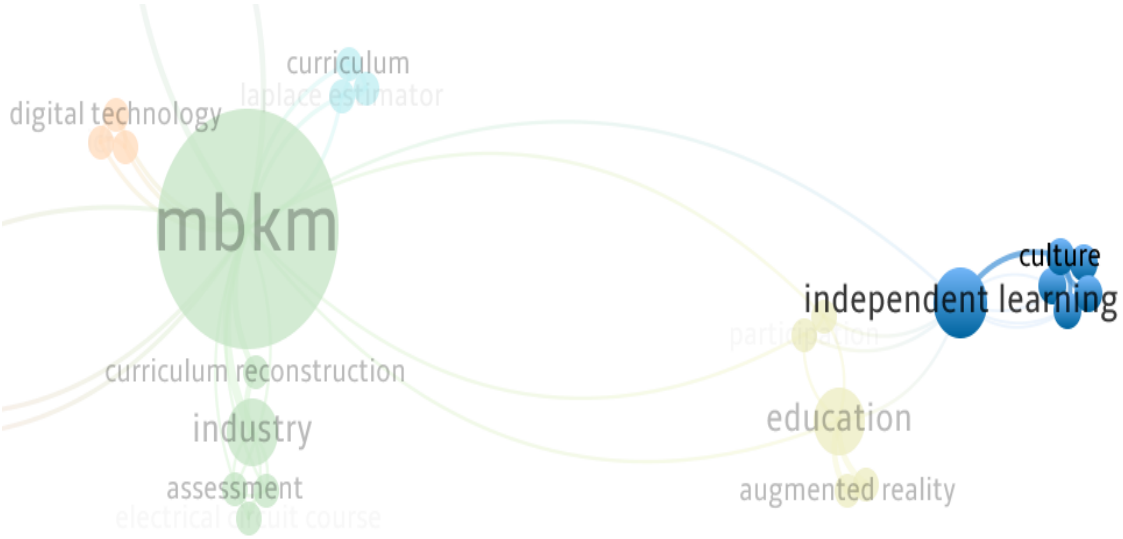

Figure 4. MBKM is not currently linked directly to cluster three (citizenship, culture, EFL teachers, independent learning, literacy, and student exchange)

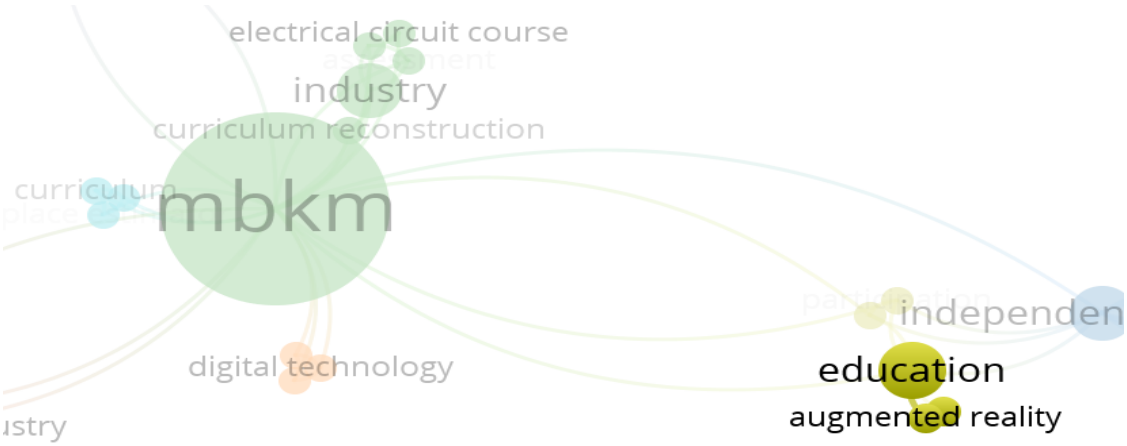

Figure 5. MBKM is not currently linked directly to cluster four (augmented reality, education, online learning,

participation, and the university)

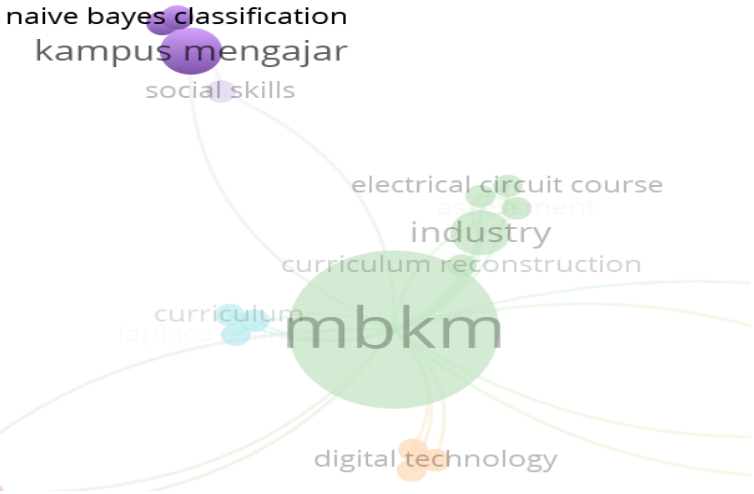

Figure 6. MBKM is not currently linked directly to cluster five (Kampus Mengajar, naive Bayes classification, sentiment analysis, and social skills)

The visualization of the MBKM management network still does not directly examine culture, literacy, student exchange, citizenship and teacher abilities (Figures 4). These items are very important to pay more attention to because they can provide more detailed information on learning and developing the MBKM program. Understanding the correlation between the MBKM and these items can facilitate the creation and implementing of comprehensive programs tailored to student needs and the dynamic job market.

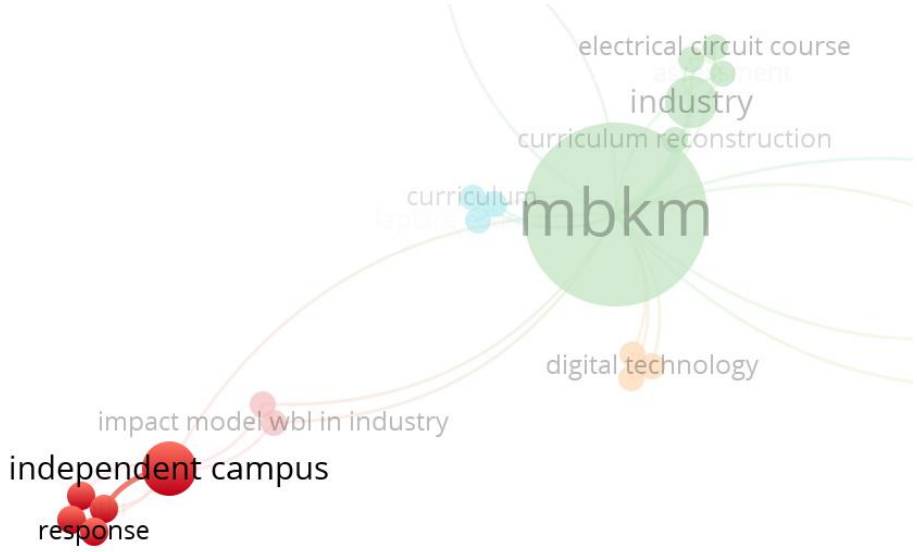

Figure 7. MBKM is not currently linked directly to cluster six (curriculum-related aspects, Laplace estimator, and naive Bayes)

Culture can influence student interaction and development in the learning process (Pereira et al., 2021; Xiao, 2019). Within the MBKM framework, student culture and the academic environment can influence adjustments to the curriculum, learning methods and support services. The MBKM program can improve the quality of learning, strengthen students' abilities and prepare them for success in a multicultural work environment by paying attention to cultural factors. Furthermore, this must be supported by the ability to read, write and think critically so that students can become independent learners (Berg, 2016). Daily life and digital literacy are crucial for student success (Asrizal et al., 2018; Dixit et al., 2023; Mezinov et al., 2023).

Student exchanges can enhance students' perspectives on a variety of educational environments. It further provides experience outside the school environment and can improve social skills. Social skills

are important for meeting the challenges of a highly interconnected global workforce (Sail & Alavi, 2010). Furthermore, social skills can be empowered using learning models. Teachers must be able to implement a student-centered learning model. A student-centered learning model can empower students' thinking abilities (Bowe et al., 2020; Handayani et al., 2018). Therefore, teachers must apply learning models to equip graduates with skills that align with the demands of the world of work.

Future research should focus on conducting a comprehensive study of cultural integration, literacy, student exchange and the role of teachers in the learning process. The research aims to reveal how to improve MBKM. This can provide a deeper perspective on education in developing students' abilities as an integral part of global society.

Research related to the MBKM program has not directly studied learning technology. Future research could pay attention to the use of technology, for example, Augmented Reality (AR), Virtual Reality (VR), or Artificial Intelligence (AI) in providing learning experiences for students. Learning technology provides interactive learning experiences that enrich knowledge and improve skills (Arlinghaus et al., 2023; Fleer, 2019).

Research can also explore how specific technologies can enhance industry-focused interactive learning and pinpoint barriers to technology use. Researchers can also assess the direct influence of involvement in the MBKM program on students' post-graduation careers, such as job placement, job success, and workplace adaptability. The study can broaden its scope by exploring factors influencing student career success, such as practical experience, knowledge gained, and skills developed through MBKM.

Data analysis methods related to MHM research are still not varied. So far, sentiment analysis and naive Bayes classification have been used. Future research can be carried out using other methods, such as qualitative or quantitative. Qualitative research methods can expand and refine researchers' understanding of the items studied (Miller & Palacios, 2017).Furthermore, you can also use interview, observation, documentation and survey methods. Experimental research can be conducted to evaluate the effectiveness of different learning methodologies incorporating elements of culture and literacy within the MBKM framework.

There are only a few research samples in the MBKM program. So, conducting research with different or more varied samples is necessary. Variation in research samples is important for several reasons. First, it ensures a better population representation (Schreiber & Turk, 2022), allowing more general conclusions to be drawn. Additionally, a varied sample helps avoid bias and allows for in-depth comparative analysis. This also increases the research's external validity and enriches the research context with insights into relevant social, cultural and economic dimensions. The next research suggestion could be to research the MBKM program in Indonesian regions by expanding the scope of research.

Conclusion

The analysis results from 2021 to 2023 show an increase in the number of documents related to MBKM. Furthermore, at the beginning of 2024, there will be a document. This increase indicates that many researchers are studying the MBKM program. Important information from the analysis results indicates that the MBKM program received a positive response from students and institutions. However, several MBKM programs still need to be considered in their implementation. Furthermore, the bibliometric visualization results show that there are seven clusters. Some clusters are not directly connected to the MBKM program, such as topics on citizenship, culture, independent learning, literacy, student exchange, augmented reality, online education, participation, campus teaching, social skills, and curriculum. The lack of connection between the MBKM program and several of these topics provides an opportunity for researchers to study it more deeply. Furthermore, learning quality needs to be improved through various learning activities so that student's skills and abilities can be empowered more optimally to prepare students to face current developments.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Author Contributions

A. Usman: collecting data and writing articles **T.A.W Hartati:** revising articles.

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