**iMProvement**
Jurnal Ilmiah Untuk Peningkatan Mutu Penddikan
**e-ISSN: 2597-8543**
**Journal Homepage:** http://journal.unj.ac.id/unj/index.php/improvement
**Journal Email:** improvement@unj.ac.id

# AI SMART CONTRACT: POINT CONVERSION PLATFORM FOR THE MERDEKA BELAJAR – KAMPUS MERDEKA PROGRAM BASED ON ARTIFICIAL INTELLIGENCE

**Teguh Trianung Djoko Susanto[1]**
**teguhtrianungdjokos@gmail.com**
**[1]Manajemen Pendidikan, Universitas Negeri Jakarta**

**Soraya Nuron Jamil[2]**
**nuronsoraya@gmail.com**
**[2]Manajemen Pendidikan, Universitas Negeri Jakarta**

**Stevani Reynita[3]**
**stepreys2@gmail.com**
**[3]Manajemen Pendidikan, Universitas Negeri Jakarta**

**Zaahidah Faadhilah[4]**
**zahidahfadhilah@gmail.com**
**[4]Manajemen Pendidikan, Universitas Negeri Jakarta**

**Winda Dewi Listyasari[5]**
**winda_dewi@unj.ac.id**
**[5]School of Education Department, University of Nottingham**

## ABSTRAK

Kebijakan Merdeka Belajar – Kampus Merdeka (MBKM) yang dikeluarkan oleh Kementerian Pendidikan dan Kebudayaan membuka kesempatan besar bagi perguruan tinggi untuk menciptakan lulusan yang kompeten dan berdaya saing. Program MBKM memberikan hak bagi mahasiswa untuk mengikuti pembelajaran di luar program stdui maupun perguruan tinggi dengan penyetaraan atau konversi SKS. Namun, Dirjen Kemendibud Ristekdikti menyoroti bahwa masih terdapat banyak perguruan tinggi yang belum memberikan hak konversi nilai dengan semestinya pada amhasiswa (Kemendikbud, 2022). Tim Kastrat BEM FMIPA UNEJ yang menemukan bahwa 93,7% mahasiswa yang telah mengikuti MBKM resah karena harus mengambil ulang SKS yang belum terkonversi (Kastrat BEM FMIPA UNEJ, 2022). Melalui analisis SWOT, penelitian ini memberikan solusi gagasan berupa *Smart Contract* berbasis *Artificial Intelligence* sebagai platform konversi nilai program MBKM untuk mempermudah program studi dalam mengonversi nilai mahasiswa sesuai dengan kebutuhan dan inti kompetensinya.

**Kata-kata kunci: Merdeka Belajar – Kampus Merdeka, Konversi Nilai, *Smart Contract.***

***ABSTRACT***

*The Merdeka Belajar – Kampus Merdeka (MBKM) policy issued by the Ministry of Education and Culture opens up great opportunities for universities to create graduates who are competent and competitive. The MBKM program gives students the right to take part in learning outside the department or university with the equivalent or conversion of credits. However, the Director General of the Ministry of Education and Culture, Research, Technology and Higher Education, highlighted that there are still many universities that have not provided proper grade conversion rights to students (Kemendikbud, 2022). The Kastrat BEM FMIPA UNEJ team found that 93.7% of students who had taken MBKM were worried because they had to retake credits that had not been converted (Kastrat BEM FMIPA UNEJ, 2022). Through SWOT analysis, this research provides an idea solution in the form of an Artificial Intelligence-based Smart Contract as a value conversion platform for the MBKM program to make it easier for departments to convert student grades according to their needs and core competencies.*

**Key words:** ***Merdeka Belajar – Kampus Merdeka, Value Conversion, Smart Contract.***

## INTRODUCTION

At the beginning of 2020, the Ministry of Education, Culture, Research and Technology (Kemendikbud) issued the Merdeka Belajar – Kampus Merdeka (MBKM) policy. This policy is motivated by the need for student competency who are ready to face the world of work and rapid technological advances (Kemendikbud, 2020). The implementation of the independent curriculum currently being pursued in Indonesia has the same vision as the number one education system in the world, Finland. This was conveyed directly by Finnish education expert Allan Schneitz at his international seminar in Surabaya 2020, he stated that the independent learning curriculum including the MBKM program which is being pursued by the Indonesian Minister of Education is a very appropriate decision, where independent learning places students as good learners. independent, equal, responsible, and supports freedom in determining what they will study (Schneitz, 2020). The MBKM program is also similar to the concept of education in Finland, which provides the widest possible opportunities for students or learners to develop skills according to their interests and talents. This characteristic of independent learning is in line with research (Putra, 2015) where equality, cooperation, responsibility and culture are the foundations of education in Finland which have been proven to provide very effective results in developing education.

Based on MBKM guidelines, this program gives students the right to be able to take part in learning outside the departments for 1 semester and outside the university for 2 semesters which includes: 1) student exchange, 2) internship, 3) teaching assistantship 4) research, 5) humanitarian projects, 6) entrepreneurship, 7) independent projects, 8) building villages. Universities are given the freedom to provide MBKM activities that suit the needs and interests of their students. By participating in MBKM, students will get various opportunities and challenges to develop creativity, personal capacity, and independence in finding knowledge to achieve their learning targets (Kemendikbud, 2022). By participating in MBKM activities, students can explore knowledge with competent practitioners and its application in the work industry or community environment, and in the long term this can make students better prepared to face the competitiveness of the world of work.


**DOI : 10.21009/improvement.v10i2. 40422**

The MBKM program has received increasing enthusiasm from students throughout Indonesia. This is proven by data as of 2022, as many as 27,592 students from 648 universities passed one of the MBKM programs (Denty, 2022), an increase from previously only 13,272 in 2021. Students expressed interest in MBKM because they felt it was very relevant to current needs. This. However, based on a report (Salsabila, 2022), the Director General of Higher Education, Ministry of Education and Culture, highlighted the problem regarding students' semester credit unit (SKS) conversion rights which are not provided by several universities. According to the MBKM Guidebook, independent study activities for 6 months are equivalent to 20 credits without being equalized with other courses. This problem is supported by research conducted by Alfikalia et al (2022) that there are obstacles experienced by the departments in deciding which courses will be used for grade conversion. In the research conducted, researchers found that there were at least 25 other journals that discussed obstacles to universities in providing value conversions to students taking part in the MBKM program.

This condition is a gap for departments from higher education institutions in Indonesia which are currently developing MBKM programs. In this case, the role of departments is very necessary to optimize the outcomes of MBKM policies. The determination of this target is also based on the aim of launching the MBKM program by the Ministry of Education and Culture in support of Sustainable Development Goals point 4 to ensure education that is inclusive and of equal quality and supports lifelong learning opportunities for all. Based on this analysis, it can be identified that this research is based on actual conditions that occur, there are great enthusiasm of students for the MBKM program, but there are several obstacles in its implementation, one of which is obstacles related to the conversion of grades for students in the MBKM program which occurs in many universities. tall. The ideal situation to be achieved is to achieve conversion rights equivalent to 20 credits for students who have participated in the MBKM program well. Between the actual conditions and the ideal conditions to be achieved there is a gap, namely the value conversion system which has not been fully implemented to support student activities in the MBKM program. Therefore, researchers proposed an idea concept in the form of a smart contract based on Artificial Intelligence (AI) as a value conversion platform for the MBKM program as an applied technological innovation towards an independent Indonesia. This concept creates ease of decision making in converting student grades and creates opportunities for implementing MBKM in a more collaborative and participatory manner for departments that are developing MBKM on their campuses.

## RESEARCH METHODS

The writing method used in this research uses qualitative methods with literature study techniques. The writing procedure in this research adapted a development model in data collection. The researcher collected data using observation and literature study methods. Researchers have made observations of the environment and current social phenomena which are the object of writing this research. The data used in this writing is supporting data based on library information from various library sources such as electronic books, scientific journals, scientific research works, data from related agencies, and articles from electronic media. Data analysis in writing this research used descriptive method techniques. The information that has been obtained is then compiled, interpreted and analyzed to provide an explanatory picture of the research object.

## RESULTS AND DISCUSSION

### *Results*

### Merdeka Belajar – Kampus Merdeka (MBKM)



***Jurnal iMProvement Vol. 10 No. 2, Desember 2023***
**DOI : 10.21009/improvement.v10i2. 40422**

Current developments demand increasingly advanced educational needs in line with the intense competition for competencies in the digital era. Educational institutions now no longer focus only on increasing knowledge and theory, but on realizing knowledge through various self-development opportunities that students can take part in as part of their learning. This is realized through the Merdeka Belajar - Kampus Merdeka which aims to improve the competency of graduates, both soft skills and hard skills, so that they are better prepared and relevant to the needs of the times and prepare graduates as future leaders of the nation who are superior and have personality.

MBKM is present as a new curriculum that has been adapted by universities throughout Indonesia since 2020 through Minister of Education and Culture Regulation No. 3 of 2020 Article 18 concerning National Higher Education Standards and states that the completion of the period and amount of study for undergraduate students or equivalent graduate students can be carried out: 1) Monitoring the entire learning process in departments at universities according to the period of study and amount of study; and 2) following the internal learning process of the departments to fulfill part of the time and learning load and the rest following the learning process outside the department (Kemendikbud, 2020). The implementation of this curriculum is expected to encourage mastery of scientific concepts with social problems and needs in the era of society 5.0 and create graduates who have competencies in accordance with scientific disciplines in accordance with the OBE (Outcome Based Education) education system (Kholik et al., 2022).

The MBKM curriculum provides opportunities and freedom for students to be able to explore their own competencies and improve their skills through 8 superior programs that are fully funded for one semester starting from certified independent studies, student exchanges, internships, humanitarian projects, research and research, building villages (Thematic KKN) , and entrepreneurship programs. True learning doesn't only happen in the classroom, the experiential learning model is used in the MBKM implementation program to give students access to explore and experience first-hand applied science practices in the real world based on real-life problems. The novelty of this innovation removes boundaries for students to choose with whom, where, and in what way they want to learn.

This indirectly refers to the education system in developed countries, one of which is Finland, which is based on justice and equality and provides opportunities for students to understand areas of self-development and choose areas of learning that suit their interests and talents (Suardipa, 2019). Apart from that, the education system also emphasizes the formation of a learning community, namely collaborating educators, students and the community as part of learning and making them feel responsible for education so that the education system will be superior (Absawati, 2020). MBKM collaborates with more than 250 partners and dozens of universities both domestically and abroad to organize this program which opens up opportunities for students to establish connections and communicate as widely as possible.

Preparations for implementing MBKM can be explained through seven main points which emphasize the other seven points (Purwanti, 2021). The seven preparation points include improving the internal quality of educational institutions by 1) preparing the soft skills and hard skills of students who will later take part in the MBKM program; 2) make curriculum changes; then determine the institution's position by 3) publication via social media; 4) establish cooperation with mutually satisfying partners; 5) increase the institution's ranking; and creation of mechanisms to facilitate students' transition to professional life, namely 6) self and career management; and 7) career development - skills (Purwanti, 2021). These points show long-term benefits for students and universities because they are able to produce much higher quality human resources.

The MBKM curriculum provides autonomy for universities to adapt these policies to existing curriculum and provisions on campus. The Ministry of Education and Culture proposes

four stages of implementing MBKM in departments. These steps are; 1) identify existing academic activities and plan new actions to be implemented; 2) access the MBKM Implementation Guidelines for curriculum development instructions; 3) develop department curricula and cooperation documents with partner universities; and 4) preparing for the implementation of MBKM (Kemendikbud, 2020). With the help of this guide, the Ministry of Education and Culture has provided detailed steps that can be taken by all universities that are developing MBKM on their campuses.

In particular, departments need to make adjustments to MBKM policies, which are: (1) Developing and adapting the curriculum to independent campus policies; (2) facilitating students who will take learning or activities across departments; (3) offering courses that can be taken by students outside the department and outside the university along with the requirements; (4) carrying out course equivalence with learning activities outside the department and outside the tertiary institution (Baharuddin, 2021). The departments is a party that plays a very important role in designing curriculum adjustments and carrying out grade conversions for students' ongoing courses. However, in practice, not all of the eight MBKM programs can be easily applied to courses in each department which have different characteristics and core competencies.

**Artificial Intelligence (AI)**

The term artificial intelligence first appeared at the Darthmouth conference in 1956, the theory and concept itself has appeared since 1944 in several studies discussing artificial intelligence (Supriyadi & Asih, 2021). Artificial Intelligence or what is usually abbreviated as AI is the naming term for an artificial intelligence system related to the concepts of computer programs, machine learning, hardware and software (Batubara, 2020). Andreas Kaplan and Michael in (Siahaan et al., 2020) define AI as the ability of a system to interpret external data correctly, to learn from that data, and to use that learning to achieve certain goals and tasks through flexible adaptation.

The increasingly rapid advances in technology make it possible to create systems that can easily process data and produce output according to the user's wishes. Basically, AI aims to be able to capture information, process it, and produce output from the data using computer devices so that it can work like humans. This is supported by the statement (Bullock, 2019) which states that the concept of AI is creating a tool or machine that can think and act like a human.

The presence of artificial intelligence is one of the tools used to solve problems and is a complement to reducing the level of decision making based on personal beliefs (Goralski & Tan, 2020). This technology is here to help humans do work and solve problems so that heavy activities will feel much lighter thanks to the help of an artificial intelligence system. Often the emergence of artificial intelligence is considered to be a threat to humans, but AI will not be able to replace the role of humans and will only support human resources so that quality increases.

In the development of artificial intelligence, the most widely used model is a framework known as Cased Based Reasoning (CBR). This framework works by comparing new data with old data and calculating the similarity of the two data to find out how accurate the level of similarity of the data is. Through artificial intelligence, the system will automatically save data or cases to be used later as a solution if it finds similarities if there are similar cases. The system will automatically identify data, then suggest solutions to problems and evaluate the proposed solutions (Menkovski & Metafas, 2008).



***Jurnal iMProvement Vol. 10 No. 2, Desember 2023***
**DOI : 10.21009/improvement.v10i2. 40422**

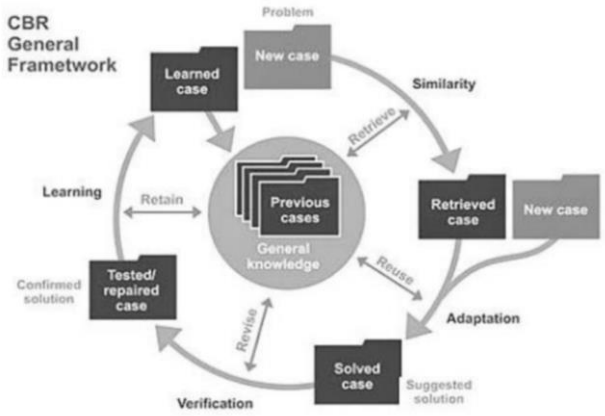


Figure 1. CBR General Framework

This model consists of four work stages, the first is retrieve, the process of recognizing problems and reviewing data or cases that have similar criteria. Second, reuse, the reuse of information in previous cases to look for differences or similarities between existing data and current data in order to become new data output. Third, revision, the process of reviewing the case and evaluating the results. If there is a match, it will continue with the next action, but if not, an error solution will be provided for the new case problem and stored in the database. Fourth, retain, saving the problem from the case which can later be used to overcome problems in the future (Devianto & Dwiasnati, 2020).

Artificial intelligence technology is a system that helps the departments to organize, manage and facilitate students to obtain their rights to take part in the MBKM program. The application of this technology is an effort to improve the quality of human resources and facilitate the process of converting courses into a department assessment system.

***Discussion***

**Current Conditions**

The Central Statistics Agency (BPS) noted that by the end of 2021 there were around 7.6 million students under the Ministry of Education and Culture, Research and Technology. This has great potential if all students have the opportunity to take part in MBKM activities with the right to study for 3 semesters outside the department and a guarantee of 20 credits in accordance with Ministerial Decree No. 75P 2021. The MBKM program offers challenges, opportunities and development of students' creativity, skills, personality and needs in developing independence in seeking and finding information on the realities and dynamics of the world of work. The MBKM guidelines published by the Ministry of Education and Culture explain that universities must (may or may not) encourage students' rights to: a) Take a maximum of 2 semesters or the equivalent of 40 credits to study outside of college; b)Take a maximum of 1 semester or the equivalent of 20 credits to study outside a different department.

Based on these guidelines, universities are expected to be able to develop and facilitate the implementation of the MBKM program by creating academic guidelines. In supporting this, the departments plays a role in: a) Adjustment of the curriculum to the independent campus implementation model; b) Support students who will take interdisciplinary learning programs at universities; c) Offer courses that students can take outside the study department and outside the university according to their needs; d) Organizing courses that are equivalent to learning activities outside the department and outside the university; e) If there are courses/credits for learning activities outside the department and outside the university that have not been completed, it is necessary to prepare alternative online courses.

If the role of the department in converting student grades can be carried out well, then students can optimize the benefits of the MBKM policy and be better prepared to face the world of work found in the MBKM program. Samijayani, (2022) in his research found that more than 80% of students felt that the MBKM program could have a good impact in improving graduate competency. This shows interest and good judgment for students to take part in the MBKM program. In this way, optimal implementation of MBKM will also have an impact on universities so that they can increase the achievement of key performance indicators (IKU) as a reference for the quality of human resources produced from these universities.

Even though many universities have implemented the MBKM program, not many have discussed the adjustments that need to be made to apply MBKM. The first thing that requires serious attention is related to the role of the departments regarding the implementation of the MBKM program, especially in converting student grades (Salsabila, 2022). This is supported by research which states that the input of grades is not integrated for students taking part in the MBKM program and there are obstacles for departments in adapting the existing curriculum to the MBKM curriculum (Bhakti et al., 2022). Each department has different learning achievement targets which refer to the National Education Standards (Junaidi & et al, 2020), so it is necessary to adjust the achievement targets of each department to provide conversion rights for 20 credits for students who take part in the MBKM program.

With various achievement targets for each department, the conversion of grades at various universities is still not well systemized. Susanto et al., (2022) in their research stated that there is no guide or systemization for the conversion of MBKM credits in the department so that up to now the conversion of grades is still done manually by confirming with the relevant lecturer in that semester. In addition, obstacles to converting grades raise concerns for students. In a survey conducted in a study, there were 37 percent negative sentiments that expressed problems with grades and value conversion (Sandra, et al., 2021). This data is also supported by a survey conducted by the Kastrat BEM FMIPA UNEJ team which found that 93.7% of students who had taken MBKM were worried because they had to retake credits that had not been converted (Kastrat BEM FMIPA UNEJ, 2022). This data shows that the procedure is quite difficult for students to obtain conversion rights and makes it difficult for departments if there are many students taking part in the MBKM program.

**AI Smart Contract**

Based on the conditions and various constraints and obstacles in achieving the potential described in the previous section, researchers formulated the idea of an Artificial Intelligence-based Smart Contract as an MBKM value conversion platform which has the following idea visualization.

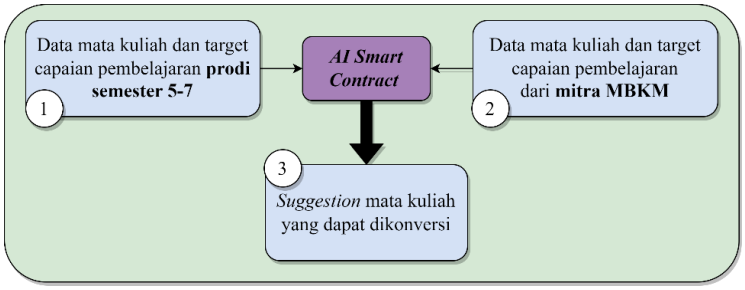


Figure 2. Visualization of Ideas

Based on the visualization of the ideas above, the AI Smart Contract platform has three main steps to achieve the final goal which is expected to optimize environmental potential and meet the needs of departments and students. This formulation visualizes the main activities in making it easier for departments to convert the grades of students who take part in the MBKM program. The concrete steps in realizing it are as follows:

First, the department can input data related to courses and learning achievement targets for each course taken by students in semesters 5 to 7. This provision follows the main requirements for students who want to take part in the MBKM program, that must being in semester 5 up to 7. Second, this platform will be filled with course data from the MBKM program that students are taking part in as well as the learning achievement targets for each course. In the third step, the AI Smart Contract will carry out a review process using artificial intelligence that identifies department course data with MBKM program course data. In this case, AI will also play a role in providing recommendations for decisions on courses that can be converted and produce output in the form of study plan cards (KRS) that have been adapted to the conversion courses. If AI does not detect any similarity in courses between the two data, then the department MBKM team can make curriculum adjustments independently, which will then be recorded by AI as a data reference for subsequent comparisons.

In formulating an idea, an analysis is certainly needed to determine the strengths, weaknesses, opportunities and threats that might occur in its implementation. In this section, a SWOT (Strength, Weakness, Opportunities, Threat) to strengthen the argument that this idea can be implemented.

| **Strength** | **Weakness** |
|---|---|
| 1. Facilitate students in participating in MBKM activities.<br>2. Makes the MBKM implementation process easier because there is a fast and precise tilapia conversion platform<br>3. Optimize the outcomes of MBKM policies. | 1. Obstacles in implementation in remote areas where internet access is difficult. |
| **Opportunities** | **Threat** |
| 1. High student enthusiasm in participating in the MBKM program.<br>2. The MBKM policy will remain in effect in the following years and increasingly diverse industry partners.<br>3. Can be applied to website and application versions. | 1. Negative reactions from stakeholders in the form of rejection or sceptical thinking about the strategy being offered. |

In implementing the MBKM program at each university, several universities have created guidelines issued by each university. The following is a comparison between previously existing alternatives and the alternative strategies offered in this research:

| **Alternative Ways** | **Comparison between Alternatives** |
|---|---|
| **Pre-existing methods:**<br>There are university MBKM guidelines issued at each university, the department performs grade conversions manually per student. | **EXCESS:**<br>Becomes the main guideline in implementing the MBKM program.<br>**LACK:**<br>The guidelines are less specific for the departments which have their own characteristics, uniqueness and needs as well as ineffectiveness for departments in managing various courses that need to be converted for students. |
| **The strategies offered in the idea:** | **EXCESS:** |



***Jurnal iMProvement Vol. 10 No. 2, Desember 2023***
**DOI : 10.21009/improvement.v10i2. 40422**

| | |
|---|---|
| This strategy is present to optimize the outcome of the MBKM policy in the form of an artificial intelligence-based Smart Contract platform. | The AI Smart Contract platform will produce course equivalencies or grade conversions with minimal errors and can process data quickly<br>**LACK:**<br>There needs to be regular outreach regarding the use of the AI Smart Contract platform |

## CLOSING

Education must be oriented towards the competencies required by the world of work. An AI Smart Contract platform innovation based on artificial intelligence is a solution for departments to make decisions on converting student grades in the MBKM program quickly and precisely with minimal errors. If the problem of reporting and converting MBKM scores is not addressed, there will be a long-term decline in higher education administrative performance. The increasing number of MBKM program participants can increase the manual workload that must be done for each student. Digitalization of processes, application of technology, training, system evaluation and updates are important steps to improve administrative performance and efficiency in managing MBKM programs in higher education. Implementing the AI Smart Contract concept in higher education can streamline processes and create great opportunities to produce graduates who are competent and competitive. This can make it easier for students to explore various skills through learning outside the department or university. To avoid negative impacts and be able to realize the AI Smart Contract platform optimally, collaboration is needed with several stakeholders such as the Ministry of Education, Culture, Research and Technology as the supervisor of various activities, Google as a forum for launching a platform that can connect data on a large scale, and all universities are developing MBKM on their campuses.

## BIBLIOGRAPHY

**Journal Article:**

Absawati, H. (2020). TELAAH SISTEM PENDIDIKAN di FINLANDIA : PENERAPAN SISTEM PENDIDIKAN TERBAIK DI DUNIA JENJANG SEKOLAH DASAR INFO ARTIKEL ABSTRAK. *Jurnal Elementary*, *3*(2), 64–70. https://doi.org/10.31764/elementary.v3i2.2136

Alfikalia, A., Haryanto, H. C., & Widyaningsih, A. (2022). Dinamika Pengelolaan Program Merdeka Belajar - Kampus Merdeka Pada Kampus Swasta. *Jurnal Studi Guru Dan Pembelajaran*, *5*(1), 111–123. https://doi.org/10.30605/jsgp.5.1.2022.1557

Baharuddin, M. R. (2021). Adaptasi Kurikulum Merdeka Belajar Kampus Merdeka (Fokus: Model MBKM Program Studi). *Jurnal Studi Guru Dan Pembelajaran*, *4*(1), 195–205. https://doi.org/10.30605/jsgp.4.1.2021.591

Bhakti, Y. B., Simorangkir, M. R. R., Tjalla, A., & Sutisna, A. (2022). Kendala Implementasi Kebijakan Merdeka Belajar Kampus Merdeka (Mbkm) Di Perguruan Tinggi. *Research and Development Journal of Education*, *8*(2), 783. https://doi.org/10.30998/rdje.v8i2.12865

Bullock, J. B. (2019). Artificial Intelligence, Discretion, and Bureaucracy. *American Review of Public Administration*, *49*(7), 751–761. https://doi.org/10.1177/0275074019856123

Devianto, Y., & Dwiasnati, S. (2020). Kerangka Kerja Sistem Kecerdasan Buatan dalam Meningkatkan Kompetensi Sumber Daya Manusia Indonesia. *Jurnal Telekomunikasi Dan Komputer*, *10*(1), 19. https://doi.org/10.22441/incomtech.v10i1.7460

Dirjen Dikti Kemendikbud. (2020). Buku Panduan Pelayanan Merdeka Belajar dan Kampus Merdeka. *Merdeka Belajar-Kampus Merdeka*, 1–33. http://dikti.kemdikbud.go.id/wp-content/uploads/2020/04/Buku-Panduan-Merdeka-Belajar-Kampus-Merdeka-2020

Goralski, M. A., & Tan, T. K. (2020). Artificial intelligence and sustainable development. *International Journal of Management Education*, *18*(1). https://doi.org/10.1016/j.ijme.2019.100330

Kholik, A., Bisri, H., Lathifah, Z. K., Kartakusumah, B., Maufur, M., & Prasetyo, T. (2022). Impelementasi Kurikulum Merdeka Belajar Kampus Merdeka (MBKM) Berdasarkan Persepsi Dosen dan Mahasiswa. *Jurnal Basicedu*, *6*(1), 738–748. https://doi.org/10.31004/basicedu.v6i1.2045

Menkovski, V., & Metafas, D. (2008). *AI Model for Computer games based on Case Based Reasoning and AI Planning*. *February*, 295–302. https://doi.org/10.1145/1413634.1453242

Muhson, A., Wahyuni, D., Supriyanto, S., & Mulyani, E. (2012). Analysis of the Relevance of Higher Education Graduates to the World of Work. *Jurnal Economia*, *8*(1), 42–52. https://journal.uny.ac.id/index.php/economia/article/view/800

Purwanti, E. (2021). *Preparing the Implementation of Merdeka Belajar – Kampus Merdeka Policy in Higher Education Institutions* . *518*(ICoSIHESS 2020), 384–391. https://doi.org/10.2991/assehr.k.210120.149

Putra, A. K. (2015). Resistensi Finlandia terhadap Global Educational Reform Movement. *Tim Pengembangan Jurnal Universitas Airlangga*, *4*(1), 1393–1421. http://journal.unair.ac.id/downloadfull/JAHI8813-b1e79fe631fullabstract.pdf

Samijayani, O. N., Rahmatia, S., Alamsyah, R., & Baru, K. (2022). *Analisa Pengetahuan dan Ketertarikan Mahasiswa Program Studi Teknik Elektro UAI Terhadap Program MBKM*. *03*, 71–76.

Siahaan, M., Jasa, C. H., Anderson, K., Rosiana, M. V., Lim, S., & Yudianto, W. (2020). Penerapan Artificial Intelligence (AI) Terhadap Seorang Penyandang Disabilitas Tunanetra. *Journal of Information System and Technology (JOINT)*, *1*(2), 186–193. https://journal.uib.ac.id/index.php/joint/article/view/4322

Supriyadi, E. I., & Banyu, A. D. (2020). IMPLEMENTASI ARTIFICIAL INTELLIGENCE (AI) DI BIDANG ADMINISTRASI PUBLIK PADA ERA REVOLUSI INDUSTRI 4.0. *Jurnal Sosial Dan Humaniora Universitas Muhammadiah Bandung*, *2*(2), 12–23. https://doi.org/10.1007/978-3-030-55190-2_49

Susanto, A., Alhijri, M., Azani, M., Ali, M., & Samsirin. (2022). IMPLEMENTASI MERDEKA BELAJAR KAMPUS MERDEKA (MBKM) UNIVERSITAS DARUSSALAM GONTOR (UNIDA) PONOROGO. *Jurnal Pendidikan Agama Islam*, *5*(2), 71–82.

**Official Document:**

Badan Pusat Statistik. (2021). *Jumlah Perguruan Tinggi, Tenaga Pendidik dan Mahasiswa (Negeri dan Swasta) di Bawah Kemeterian Riset, Teknologi dan Pendidikan Tinggi/Kementerian Pendidikan dan Kebudayaan Menurut Provinsi.* Jakarta: Badan Pusat Statistik.

Batubara, M. H. (2020). Penerapan Teknologi Artificial Intelligence dalam Proses Belajar Mengajar di Era Industri 4.0 dan Society 5.0. Kampus Merdeka Seri 1: Menilik Kesiapan Teknologi Dalam Sistem Kampus . 53.

Junaidi, A., & dkk. (2020). *Panduan Penyusunan Kurikulum Pendidikan Tinggi di Era Industri 4.0 Untuk Mendukung Merdeka Belajar - Kampus Merdeka.* Jakarta: Direktorat Jenderal Pendidikan Tinggi Kementerian Pendidikan dan Kebudayaan.

Kemendikbud. (2020). *Buku Panduan Merdeka Belajar - Kampus Merdeka* (1 ed.). Direktorat Jenderal Pendidikan Tinggi Kemdikbud RI.

Kemendikbud. (2020). *Peraturan Menteri Pendidikan Dan Kebudayaan Republik Indonesia Nomor 3 Tahun 2020 Tentang Standar Nasional Pendidikan Tinggi.* Jakarta: Kementerian Pendidikan dan Kebudayaan Indonesia.

Kementerian Pendidikan dan Kebudayaan. (2020). *Strategi Implementasi BKP Merdeka Belajar-Kampus Merdeka dalam Kurikulum Pendidikan Tinggi.*

Sandra, L., Gunarso, G., & Marcel. (2021). *Program Penelitian Kebijakan Merdeka Belajar Kampus Merdeka.* Jakarta: Ditjen Diktiristek.

Suardipa, I. P. (2019). *Diversitas Sistem Pendidikan Di Finlandia Dan Relevansinya Dengan Sistem Pendidikan Di Indonesia.* Maha Widya Bhuwana.

**Electronic Source:**

Denty, A. (2022). *Terus Meningkat, MSIB Angkatan 3 Tahun 2022 Diikuti Sebanyak 27.952 Mahasiswa.* Kemdikbudristek RI.

Kastrat BEM FMIPA UNEJ. (2022). *MBKM: "Mahasiswa Ingin Berkembang, Tetapi Regulasi Mempersulit".* Jember: BEM FMIPA UNEJ.

Salsabila, U. (2022). *Dirjen Dikti Soroti Kampus yang Tak Konversi 20 SKS Program Kampus Merdeka.* Kumparan News.

Schneitz, A. (2020). Ini Kata Pakar Finlandia Soal Kebijakan Merdeka Belajar Menteri Nadiem. *Seminar Internasional.* Surabaya: unusa.ac.id.

**Conference Proceedings:**

Menkovski, V., & Metafas, D. (2008). *AI Model for Computer games based on Case Based Reasoning and AI Planning*. *February*, 295–302. https://doi.org/10.1145/1413634.1453242

Purwanti, E. (2021). *Preparing the Implementation of Merdeka Belajar – Kampus Merdeka Policy in Higher Education Institutions* . *518*(ICoSIHESS 2020), 384–391. https://doi.org/10.2991/assehr.k.210120.149