

## **The Implementation of the Teaching Campus Program on Students' 21st Century Skills: A Systematic Review**

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### **Abstract**

This study aimed to determine the implementation of the Teaching Campus Program on 21st century skills of college students and students. This study used a systematic review which was conducted by reviewing several articles to answer research questions. The research question is". The result showed that the implementation of the Campus Teaching Program on 21st century skills for college students are to address confidence, initiative, creativity and innovation, communication, cooperation, discipline, and technology adaptation. Additionally, the implementation of the Campus Teaching Program on 21st century skills for school students is to address numeracy literacy and technology adaptation.

Keywords: Implementation, Teaching Campus, Systematic Review

### **INTRODUCTION**

Education is one of the important aspects in people's lives that is often associated with quality of life (Purwanti, 2021). Wolla and Sullivan (2017) mentioned that education is often associated with human resource investment. This means that people with a higher education level will have a better income. Therefore, education is one of the aspects that can improve Human Resources (HR). Teaching and learning activities embody the educational aspect that can improve Human Resources (HR) (Meilia et al., 2022). The world's education system is required to develop an education system that emphasizes the development of skills, knowledge, and attitudes needed to face the progress of the 21st century (Martinez, 2022). 21st century skills are one of the most important issues arising from educators' concern about teaching young people (Motallebzadeh et al., 2018). One aspect of education that can influence the development of 21st-century skills is a country's curriculum policy. The Ontario Ministry of Education stated that there is an emerging global consensus on the importance of developing 21st-century skills as part of the education curriculum (Drake & Reid, 2018).

Drake & Reid (2018) examined the implementation of an integrated curriculum in overcoming 21st-century skills, with their research recommending an integrated curriculum as a facility for developing 21st-century abilities. Meanwhile, along with the Covid-19 pandemic in Indonesia, the Indonesian Ministry of Education launched a new policy with various programs that aim to improve the quality of Indonesian human resources. To prepare human resources to welcome Indonesia Gold in 2045, the Freedom to Learn and the Independent

Campus or usually called *Merdeka Belajar-Kampus Merdeka* (MBKM) policy is deemed capable of answering this challenge (Jusniaty et al., 2021). Currently,

The MBKM policy is being implemented in tertiary institutions; MBKM is a learning model in tertiary institutions designed so that students get more creative learning that is not restrictive and can meet student needs (Rochana et al., 2021). The MBKM policy is regulated in the Minister of Education and Culture Regulation Number 3 of 2020 concerning Higher Education National Standards; MBKM aims to encourage students to improve competence and experience in study programs or campus externally. The MBKM policy is a program that can provide flexibility to educational institutions, especially higher education institutions, in exploring the potential and abilities possessed by students (Mustaghfiroh, 2020). The Minister of Education and Culture gives students 3 semesters to study outside their study program, both in college and outside the college. Implementing the right to learn is realized in 8 forms of learning. In contrast, forms of learning are (1) student exchange, (2) internships/work practices, (3) Research/research, (4) Humanitarian projects, (5) entrepreneurial activities, (6) Independent studies, (7) Thematic Outdoor Service Learning, (8) Teaching assistants/teaching campuses (Jusniaty et al., 2021).

One of the leading programs that play a role in the world of education from MBKM is the teaching assistant program. The teaching assistance program, commonly called the teaching campus program, is part of the MBKM policy, which involves students worldwide. Collage with various fields to help with activities learning at school. The Teaching Campus Program has the goal of providing opportunities and experiences for students to follow as well as teach and deepen the knowledge they have by assisting the teaching process in elementary and junior high schools in areas determined by the Ministry of Education and Culture and Research and Technology (Ministry of Education and Culture, 2022). This Teaching Campus Program also focuses on strengthening literacy and numeracy, actualizing interests and potential, and assisting school administration schools that fall into the 3T category (Manihuruk & Hariyana, 2022).

The emergence of the teaching campus program, which is part of the new curriculum policy issued by the Indonesian Ministry of Education, this study aims to determine the implementation of the teaching campus program on the 21st-century skills of college students and students.

## **METHOD**

This study used a systematic review. The systematic review is a method of reviewing the appropriate and explicit literature according to the research questions that have been

made. this method does not only review the appropriate literature but also the systematic stages of the process (Helen Aveyard, 2010). Sari, et al (2022) uses five stages used to conduct a literature search in a systematic review study to ensure the accuracy of the data. These stages are:

1. The first step in this method is to create research questions, The research question in this systematic review is "How is the implementation of campus teaching towards 21st century skills of college students and school students?"
2. The second step is to identify relevant literature that fits the research question. This research uses a web search in the form of Google Scholar with a range of 2019-2023. Searching using Google Scholar is done because it is easy to access, including inexpensive publication media, and the use of official websites of universities or educational institutions to display search results that are more relevant and accountable (Makmur et al., 2021)
3. The third step is to evaluate the articles to be analyzed by limiting the sample in this study. We limited the sample of this study to school students and college students.
4. The fourth step is to review the nine articles that have been found. We present the results of the review in Tables 1 and 2. And the discussion will be explained in the results and discussion section. In this study, we produced 3 categories, namely (1) research assessment used to measure 21st century skills found in the literature, (2) learning strategies used, and (3) 21st century skills discussed in the literature
5. In the fifth stage, namely interpreting the results of the review of the nine articles that have been found.

## RESULTS AND DISCUSSION

We use Table 1 to list articles for systematic review that consist of author, title, object of research, and research assessment.

Table 1. List of types of research assessments used in research

No.	Author (Year of publication)	Title	Object of research	Research Assessment
1.	Fatonah et al (2021)	Implementation of the Teaching Campus Program at Nurani Jakarta Private Elementary School Nurani Jakarta	School Student	Interviews and observations
2.	Rosita & Damayanti (2021)	Implementation of the Pioneer Teaching	School Student	Observation

No.	Author (Year of publication)	Title	Object of research	Research Assessment
		Campus Program in Elementary Schools Affected by the COVID-19 Pandemic		
3.	Hikmawati (2022)	Training Student Soft Skills Through the Campus Teaching Program Batch 3 of 2022 at SDN 10 Ampenan	College Student	Questionnaire
4.	Panjaitan, et al (2022)	Implementation of the Campus Teaching Program Batch II in Teaching Activities for Class 1 Elementary School Students at SD Negeri 177041 Simarhumpa in 2021	College Student and School Student	Observation
5.	Shabrina Mutiara L. (2022)	Teaching Campus Activities in Improving Literacy, Numeration of Elementary School Students	School Student	Observation
6.	Manihuruk & Hariyana (2022)	The Role of the Teaching Campus Program in Improving the Competence of SDN Sepatan III, Tangerang Regency	School Student	Observation
7.	Fauziah et al (2022)	The Role of Students in the Success of Teaching Campus	School Student	Observation
8.	Waldi et al (2022)	The Role of the Teaching Campus in Improving Literacy, Numeracy, and Technology Adaptation of Elementary School Students in West Sumatra	School Student	Interviews and observations
9.	Cahya et al (2022)	Implementation of	School Student	Observation

No.	Author (Year of publication)	Title	Object of research	Research Assessment
		Campus Teaching Class I in Elementary Schools		
10.	Putri et al (2022)	Analysis of Campus Teaching Program Implementation Batch 3 in Teaching Activities, Adaptation of Technology and Administration in Mlandangan 1 Public Elementary School	School Student	Interviews and observations

Based on the reviews in Table 1, it is known that 23.33% of relevant articles were found in 2021, and 77.77% of relevant articles were found in 2022. The research object was 90% students and 10% college students. Table 1 also presents data as much as 60% using research assessments in the form of observations, 30% using research assessments in interviews and observations, and 10% using research assessments in questionnaires and questionnaires. In the articles, Rosita & Damayanti (2021), Panjaitan et al. (2022), Shabrina (2022), Manihuruk & Hariyana (2022), and Fauziah et al. (2022) use a research assessment in the form of observation where the authors of the article make direct observations and observing how the implementation, implementation of the program as well as the results of the teaching campus program at each school used as a research location. 30% used research assessments in the form of interviews and observations, namely in the articles Fatonah et al. (2021), Walidi et al. (2022), and Putri et al. (2022). Interviews and observations in the three studies were carried out by interviewing teachers to find out the effects of implementing campus teaching at these schools, and observations were made during the process of implementing the teaching campus program in their respective schools. Whereas in Hikmawati's research (2022), the research assessment was carried out in questionnaires and questionnaires to students who had participated in the campus teaching program.

Table 2. Data on 21st Century Learning Strategies and Skills listed in the study

No.	Authors (Year)	object	Learning strategies	21st Century Skills
1.	Fatonah et al (2021)	School Student	Helping students who are not yet	Literacy, Numeracy, and technology

No.	Authors (Year)	object	Learning strategies	21st Century Skills
			fluent in writing and reading, teaching students to assist students in working on math problems using formulas, as well as using PPT for learning	adaptation
2.	Rosita & Damayanti (2021)	School Student	Introducing students to the online learning process using Google Classroom and Zoom meetings	Technology adaptation
3.	Hikmawati (2022)	College Student	-	Confident, initiative, creativity and innovation, communication, cooperation, and discipline
4.	Panjaitan, <i>et al</i> (2022)	College Student and School Student	Introduction and demonstration of wordwall educational games to students,	Technology adaptation
5.	Shabrina Mutiara L. (2022)	School Student	The use of modules as teaching materials and a cooperative learning approach	Literacy and Numeracy
6.	Manihuruk & Hariyana (2022)	School Student	Holding additional tutoring outside of study hours for students who are still not fluent in reading	Literacy, Numeracy, and Technology Adaptation

No.	Authors (Year)	object	Learning strategies	21st Century Skills
			and arithmetic, and holding literacy and numeracy corner activities. Introducing the google form for attendance when online learning takes place	
7.	Fauziah et al (2021)	School Student	Literacy and Numeracy Practices in Science Learning, as well as the use of digital media in learning	Literacy, Numeracy, and Technology Adaptation
8.	Waldi et al (2022)	School Student	Reading corner, Use of kabataku and fun math learning, as well as an introduction to the zoom application and other digital learning media	Literacy, Numeracy, and Technology Adaptation
9.	Cahya et al (2022)	School Student	Learning activities are carried out using good and correct LCDs and projectors, making learning materials using interesting PPT, introducing google forms, generating links, google classroom, google meet, zoom and	Technology adaptation

No.	Authors (Year)	object	Learning strategies	21st Century Skills
			making attractive digital posters to support digital-based learning processes	
10.	Putri <i>et al</i> (2022)	School Student	In student learning activities using LCD media, projectors, and interactive PPT	Technology adaptation

Based on Table 2, there are various learning strategies carried out by students that aim to achieve the objectives of this teaching campus program for school students, namely increasing literacy, numeracy, and technology adaptation. Various 21st-century skills and soft skills acquired by school students and college students can be a provision to face the progress of the times that are entering the 21st century. The following is an explanation of various 21st-century learning strategies and skills contained in the articles that have been found.

### **Implementation of Campus Teaching for College Student Soft Skills**

Soft skills generally refer to various intra- and inter-personal (socio-emotional) skills that ensure personal, academic, and successful professionals. In addition to the lack of a clear definition and with many researchers trying to classify it, there is a lot of ambiguity about a “real” soft skill and its nature (Mitsea et al., 2021). Soft skills are synonyms for 'People Skills', 'Interpersonal Skills', or 'Transferable Skills'. A section that supports individual interaction, self-performance and career prospects (Vasathakumari, 2019). Matturo et al. (2019) write that "soft skills" are a combination of habits, personality, abilities, and attitudes that can make a person perform better in a work environment, improve technical skills that help to do his job, influence behavior, and interact with others. González-pérez et al. (2022) research states that education students and tertiary education students are emphasized to develop 21st-century skills that are explored representatively based on the six skill levels: retention and memory, motivation and attention, visuospatial skills, learning and critical thinking, cooperation, communication and social skills, and immersion, creativity and emotional skills.

College Students are a group of young intellectuals in society. College students must devote themselves to seeking improvement in the surrounding community during their

studies. College students must have soft skills as agents of change and provisions to enter the workplace. Students should acquire skills for lifelong learning while studying at university and improve their ability to self-regulate and adapt to the changing environment they will later take action on. For example, the concept of working life skills that can be used through 21st century skills (Väisänen & Hirsto, 2020).

One is participating in the teaching campus program organized by the Ministry of Education and Culture, which provides opportunities for students to develop teaching skills. Research conducted by Jufriyadi et al. (2022) stated that campus teaching programs can improve students' 21st-century skills, specifically increasing creativity and critical thinking skills. Apart from being able to improve teaching skills, teaching campus programs also have a lot of influence on college students as research has been conducted by Hikmawati (2022) explaining that this KM program can train soft skills which later must be owned by college students as a basis for entering the workplace. Soft skills measured are self-efficacy, initiative, creativity and innovation, cooperation, communication skills, and discipline. In addition, students can also practice empathy and social sensitivity towards the problems that occur around them, improve thinking skills and train cooperation between teachers and college students as colleagues in the process of planning and implementing learning activities; develop student insight, character, and soft skills; and can increase the contribution of tertiary institutions and college students in national development in the field of education. Apart from that, by participating in the teaching campus program, college students can develop technology useful for the world of work. The research conducted by Panjaitan et al. (Panjaitan et al., 2022) explained that college students can create word wall educational games, which will later be demonstrated to students at school.

### **Implementation of Teaching Campus on School Students' Literacy, Numeracy, and Technology Adaptation Capabilities**

The Economist Intelligence Unit (EIU) study states that 21st century skills that meet the needs of the authorities and the wider community include leadership, digital literacy, problem solving and communication that complement traditional skills, such as reading, writing and numeracy or Literacy and Numeracy (Wrahatnolo & Munoto, 2018). In line with this statement, the aim of the teaching campus program which is part of the MBKM is also to focus more on improving 21st century skills. The main focus of the teaching campus program is to improve literacy, numeracy, and technology adaptation. college students design and conduct teaching to students to create a cool and fun learning atmosphere by the main teaching campus program. The teaching campus program is successful in increasing school

students' literacy, numeracy, and technological adaptation in learning activities as well as in the environment of everyday life (Waldi et al., 2022).

### 1. Literacy

The Ministry of Education and Culture announced the activities of the National Literacy Movement (GLN); this activity is carried out in every school as the School Literacy Movement (GLS). One of the School Literacy Movements is numeracy literacy (Perdana & Suswandari, 2021). In the 21st century, literacy skills are one of the skills needed so that students are directed to be able to have these abilities (Setyawati et al., 2021). According to Community Child Care Victoria (2011), Literacy is the ability and confidence to use language in all its forms and combine various kinds of communication. Strengthening numeracy literacy is a must for teachers and students. Teachers must be able to strengthen 21st-century numeracy literacy learning with creative, critical thinking, communicative, and collaborative learning outcomes (Ibda, 2018)

Practice engagement theory (PET) posits that individuals' literacy proficiencies develop as a by-product of their engagement in everyday reading and writing practices and, reciprocally, that literacy proficiencies affect levels of engagement in reading and writing practices. This suggests that literacy training, which increases engagement in meaningful practices, might generate proficiency growth. Research has shown that this approach seems effective in improving (adult) learners' literacy proficiency (Reder et al., 2020). At the macro level, a country's national gross domestic product (GDP) growth has been associated with increasing literacy and numeracy proficiency (Schwerdt and Wiederhold 2018).

Referring to the PISA (Program for International Student Assessment) score in 2018, Indonesia ranks sixth from the bottom, which shows that students' reading ability is still a concern. With the Teaching Campus program organized by the Government, it is hoped that it can improve literacy skills, especially for elementary and junior high school students. The research conducted by Manihuruk & Hariyana (2022) explained that college students assigned to SDN Sepatan III Tangerang Regency provided motivation and support to students who were not yet fluent in reading and held a literacy corner, with a literacy corner students became brave and happy to read so that literacy skills of students in SDN Sepatan III. Other studies also say that to increase student literacy in schools, college students teach students to write cursive letters, and outside of school hours, students hold additional tutoring for students who are still not fluent in reading (Fatonah et al., 2021; Waldi et al., 2022). In addition, research conducted by Shabrina (2022) explains that the campus teaching program activities help students develop their literacy skills because students assigned to schools use interesting

learning models and learning media such as the PjBL (Project-based Learning) learning model. and Cooperative Learning and using flashcard learning media.

## 2. Numeration

Good numeracy literacy skills through learning in schools from elementary to high level is one of the answers in responding to the challenges of 21st-century education. The scope of numeracy literacy is used in mathematics and relates to everyday life, so it is important to develop it early (Handayani et al., 2021). According to the State of Victoria (2017), numeration is a skill, behavioral knowledge, and disposition students need to use mathematics in various situations. In particular, the United Nations Sustainable Development Goals (SDGs) Target 4.6 calls on all world countries to "ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy" (Gal et al, 2020). It engages with numeracy and mathematical literacy, New Literacy Studies, adult education, and lifelong learning in the context of the United Nations Sustainable Development Goals (SDGs), both from theoretical perspectives and from an empirical viewpoint (Grotluschen et al., 2020)

Numeracy is the ability to understand mathematical and probabilistic concepts (Suprawata & Riastini, 2022) There are three indicators of numeracy literacy skills, namely: 1) the use of numbers and symbols related to basic mathematics as a solution to existing problems in everyday life, 2)analyzing information in mathematics in the form of graphs, tables, charts, and so on, and 3)interpreting the entry of information on mathematical problems (Situmorang & Sinaga, 2022)

Seeing the problems in schools, students still have difficulty in math lessons. With the Teaching Campus program organized by the government, numeracy activities in schools can be helped. This is to research by Manihuruk & Hariyana (2022) & Walidi et al. (2022), which explains that with the Campus Teaching Program in Schools, students who are not fluent in counting can be helped because there are Campus Students teaching who hold additional tutoring programs after returning home. Schools and a numeration corner are also held that can improve students' numeracy and numeracy skills. Other research also says that with the Teaching Campus program, students become more fluent in counting because college students introduce students to more interesting teaching variations, one of which is learning to count while singing; that way, students are better able to understand and remember the material being taught (Fatonah et al., 2021).

### 3. Technology Adaptation

In the 21st century, technology and communication have significantly influenced all human life domains (Gnambs, 2021). Similarly, technology and communication have also transformed the education sector and changed teaching practices to be more interactive and productive (Lin et al., 2018) as it offers a variety of tools that are used in the classroom both face-to-face and online, thus making the classroom environment proactive (Jogezai et al. 2021; Helaludin, 2019). These tools allow students to conduct a continuous exchange of ideas, independent research process, development of critical thinking and creativity, and self-evaluation of their learning (Al-azawei, 2019). According to Suleimen (2019), technology and communication significantly positively affect student learning, making it suitable for use in learning activities. This is because its use in learning activities can stimulate collaborative and cooperative dynamics among students, versatile and interpersonal communication, and create a teaching-learning community (Liesa-Orús et al., 2020). In addition, Sointu et al. (2019) consider technology and communication as fundamental tools for developing and managing all 21st century student skills. The teaching campus program is one of the activities that can improve students' technology and communication skills. This is to research conducted by Manihuruk & Hariyana (2022) explaining that with the Campus Teaching Program, online learning at SDN Sepatan III Tangerang Regency does not only use WhatsApp groups, but college students introduce relevant learning videos contained on the platform on YouTube, students also introduce interesting PowerPoints that can be used for study materials. Students also introduce students to the Google form for attendance lists and Google Drive for submitting school assignments.

Besides that, with the Technology Adaptation KM Program, students feel that the learning process does not only use the WhatsApp group, but virtual classes are also held through Google Classroom and Zoom Meetings, as well as introducing new technological adaptations to students so they can adapt to technological developments (Rosita & Damayanti, 2021; fauziah et al., 2022; Panjaitan et al., 2022; Fatonah et al., 2021; Walidi et al., 2022). Whereas research conducted by Cahya et al. (2022) said that with the Teaching Campus program, college students introduce students to technology-based learning, such as watching learning videos using LCD projectors, and then students also introduce digital posters as learning media. The impact of implementing technology adaptation in schools is that students become more aware of the variety of uses of technology that can be used in the learning process so that it can improve student academic achievement (Asif et al. 2020; Abbasi et al., 2022), and increase students' creative thinking (Ali et al. 2018), and students can analyze and

solve problems in groups (Sá & Serpa, 2018). Then, the impact of implementing technology adaptation, according to research by Putri et al. (2022) at SDN 1 Mlandangan, is increasing students' comprehension of learning. Apart from that, Panjaitan et al. (2022) research explains that students can recognize and use one of the educational games with a teaching campus program. Word wall games are very educative, efficient, and fun.

## CONCLUSION

Implementation of the Campus Teaching Program on 21st-century skills for school students and college students is carried out with various learning strategies ranging from conducting reading and writing training, creating reading corners, applying fun mathematics, learning to count with formulas, introducing digital-based learning media, conducting online classes and so on that can improve the 21st-century skills of school students and college students. The Teaching Campus Program is a part of MBKM in the form of program implementation by inviting college students from all over Indonesia to gain teaching experience in elementary or junior high schools in the 3T areas. This teaching campus program aims to increase Literacy and numeracy, Adapt students to technology, and improve some college students' abilities to face the challenges of the 21st Century. These abilities are self-efficacy, initiative, creativity and innovation, cooperation, communication skills, and discipline. Apart from that, college students can also practice empathy and a social spirit towards the problems that occur around them; hone thinking skills and collaboration between teachers and college students as partners in the planning process and the process of implementing learning activities; develop student insight, character, and soft skills.

## REFERENCES

- Abbasi, W. T., Ibrahim, A. H., & Ali, F. B. (2022). Perceptions About English as Second Language Teachers' Technology Based English Language Teaching in Pakistan: Attitudes, Uses of Technology and Challenges. *Lecture Notes in Networks and Systems*. [https://doi.org/10.1007/978-3-030-82616-1\\_28](https://doi.org/10.1007/978-3-030-82616-1_28)
- Al-azawei, A. (2019). WHAT DRIVES SUCCESSFUL SOCIAL MEDIA IN EDUCATION AND LEARNING? A COMPARATIVE STUDY ON FACEBOOK AND MOODLE. *Journal of Information Technology Education Research*, 18, 253–274.
- Ali, Z., Gongbing, B., and Mehreen, A. (2018). Understanding and predicting academic performance through cloud computing adoption: a perspective of technology acceptance model. *J. Comp. Edu.* 5, 297–327. doi: 10.1007/s40692- 018-0114-0
- Asif, M., Edirisingha, P., Ali, R., and Shehzad, S. (2020). Teachers' practices in blended learning environment: perception of students at secondary education level. *J. Edu. Educ. Dev.* 7, 286–306. doi : 10.22555/joeed.v7i2.19
- Cahya, O. D., Mumpuni, S. D., & Apriatama, D. (2022). Implementasi Kampus Mengajar Angkatan I di Sekolah Dasar. *Jurnal Ilmiah KONTEKSTUAL*, 3(02), 93-99.

- Community Child Care Victoria. (2011). *Early Literacy and Numeracy Self - Guided Learning Package*. Australia.
- Drake, S. M., & Reid, J. (2018). Integrated Curriculum as an Effective Way to Teach 21st Century Capabilities. *Asia Pacific Journal of Educational Research*, 1(1), 31–50. <https://doi.org/10.30777/apjer.2018.1.1.03>
- Fatonah, K., Alfian, & Lestari, S. (2021). *IMPLEMENTASI PROGRAM KAMPUS MENGAJAR DI SEKOLAH DASAR SWASTA NURANI JAKARTA Dosen Universitas Esa Unggul Jakarta Surel: khusnul.fatonah@esaunggul.ac.id Kampus Mengajar merupakan salah satu bagian dari kebijakan Merdeka Belajar Kampus Merdeka ( MBKM ) yan. 5(September), 194–205.*
- Fauziah, N. A., Hernadianto, Yuniarti, R., & Sriwahyuni, M. (2022). Peran Mahasiswa Dalam Mensukseskan Program Kampus Mengajar. *Jurnal Ilmiah Mahasiswa Kuliah Kerja Nyata (JIMAKUKERTA)*, 2(2), 434–441.
- Gnambs, T. (2021). The development of gender differences in information and communication technology (ICT) literacy in middle adolescence. *Computers in Human Behavior*, 1–10. <https://doi.org/10.1016/j.chb.2020.106533>
- Gal, I., Grotluschen, A., Tout, D & Kaiser, G. (2020). Numeracy, adult education and vulnerable adults: a critical view of a neglected field. *ZDM*, 51:377-394
- González-pérez, L. I., & Ramírez Montoya, M. S. (2022). Components of Education 4.0 in 21st Century Skills Frameworks: Systematic Review. *Sustainability (Switzerland)*, 14(3), 1–31. <https://doi.org/10.3390/su14031493>
- Grotluschen, A., Desjardins, R & Liu, H. (2020). Literacy and numeracy: Global and comparative perspective. *International Review of Education*, 66: 127-137
- Handayani, S. L., Khairil, K., & Kusmajid, K. (2021). Peningkatan Pembelajaran di Sekolah Dasar Melalui Pengabdian Masyarakat Berbasis Literasi Pada Era Pandemi Covid-19. *International Journal of Public Devotion*, 4(1), 1–8. <https://doi.org/10.26737/ijpd.v4i1.2238>
- Helaludin. (2019). Peningkatan Kemampuan Literasi Teknologi dalam Upaya Mengembangkan Inovasi Pendidikan di Perguruan Tinggi. *Pendais, I*(skor 403), 44–55.
- Helen, A. (2010). *Doing a Literature Review in Health and Social Care: A Practical Guide - Helen Aveyard - Google Books*. available at [https://books.google.co.id/books?hl=en&lr=&id=qYdFBgAAQBAJ&oi=fnd&pg=PP1&ots=aR3Z6GAem0&sig=HpVFNWrzVrYQwdG\\_E-tnoP2jml0&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.id/books?hl=en&lr=&id=qYdFBgAAQBAJ&oi=fnd&pg=PP1&ots=aR3Z6GAem0&sig=HpVFNWrzVrYQwdG_E-tnoP2jml0&redir_esc=y#v=onepage&q&f=false)
- Hikmawati, H. (2022). Melatih Soft Skills Mahasiswa Melalui Program Kampus Mengajar Angkatan 3 Tahun 2022 di SDN 10 Ampenan. *Unram Journal of Community Service*, 3(2), 30–37. <https://doi.org/10.29303/ujcs.v3i2.190>
- Ibda, H. (2018). Penguatan Literasi Baru Pada Guru Madrasah Ibtidaiyah Dalam Menjawab

Tantangan Era Revolusi Industri 4.0. *Journal of Research and Thought on Islamic Education (JRTIE)*, 1(1), 1–21. <https://doi.org/10.24260/jrtie.v1i1.1064>

Indonesian Ministry of Education and Culture. (2022). Buku Panduan Kampus Mengajar. Indonesian Ministry of Education and Culture

Jogezai, N. A., Baloch, F. A., Jaffar, M., Shah, T., Khilji, G. K., and Bashir, S. (2021). Teachers' attitudes towards social media (SM) use in online learning amid the COVID-19 pandemic: the effects of SM use by teachers and religious scholars during physical distancing. *Heli* 7:e06781. 2021.e06781 doi: 10.1016/j.heliyon

Jusniaty, Gaffar, A. G., Sumardi, Nawir, A., & Salman. (2021). Implikasi program pertukaran pelajar bagi mahasiswa program studi ilmu pemerintahan universitas muhammadiyah Sinjai. *Al Qisthi : Jurnal Sosial Dan Politik*, 11(2), 15–21. <https://umsi.ac.id/jurnal/index.php/alqisthi/article/view/100>

Liesa-Orús, M., Latorre-Coscolluela, C., Vázquez-Toledo, S., & Sierra-Sánchez, V. (2020). The technological challenge facing higher education professors: Perceptions of ICT tools for developing 21st Century skills. *Sustainability (Switzerland)*, 12(13), 1–14. <https://doi.org/10.3390/su12135339>

Lin, Y. S., Chen, S. Y., Su, Y. S., & Lai, C. F. (2018). Analysis of students' learning satisfaction in a social community supported computer principles and practice course. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(3), 849–858. <https://doi.org/10.12973/ejmste/81058>

Makmur, M., Rukmini, R., Setyaningsih, A., Novyanti, A. A., & Nur Fauziah, G. (2021). Pemanfaatan Google Scholar Dalam Mendukung Persiapan Sistem Pembelajaran E-Learning Di Politeknik Ilmu Pelayaran Makassar. *Venus*, 6(12), 110–129. <https://doi.org/10.48192/vns.v12i06.388>

Manihuruk, O. M. P. J. B., & Hariyana, N. (2022). Peran Program Kampus Mengajar dalam Meningkatkan Kompetensi SDN Sepatan III Kabupaten Tangerang. *Jurnal ABDIMAS PATIKALA*, 1(4), 316–324.

Martinez, C. (2022). Developing 21st century teaching skills: A case study of teaching and learning through project-based curriculum. *Cogent Education*, 9(1), 1–16. <https://doi.org/10.1080/2331186X.2021.2024936>

Meilia, T. A., Dan, & Erlangga, G. (2022). Aktualisasi Program Kampus Mengajar. *Jurnal Pendidikan Ke-SD-An*, 17(2), 120–128.

Mitsea, E., Drigas, A., & Mantas, P. (2021). Soft Skills & Metacognition as Inclusion Amplifiers in the 21st Century. *International Journal of Online and Biomedical Engineering*, 17(4), 121–132. <https://doi.org/10.3991/ijoe.v17i04.20567>

Motallebzadeh, K., Ahmadi, F., & Hosseinnia, M. (2018). Relationship between 21st century skills, speaking and writing skills: A structural equation modelling approach. *International Journal of Instruction*, 11(3), 265–276. <https://doi.org/10.12973/iji.2018.11319a>

- Mustaghfiroh, S. (2020). Konsep “Merdeka Belajar” Perspektif Aliran Progresivisme John Dewey. *Jurnal Studi Guru Dan Pembelajaran*, 3(1), 141–147. <https://doi.org/10.30605/jsgp.3.1.2020.248>
- Panjaitan, P., Simanjuntak, M., Silitonga, F. D., Napitupulu, L., Moenda, N., Silitonga, S., & Syahfitri, D. (2022). Implementasi Program Kampus Mengajar Angkatan Ii Dalam Kegiatan Mengajar Siswa Kelas 1 Sd Di Sd Negeri 177041 Simarhempa Pada Tahun 2021. *MARTABE : Jurnal Pengabdian Masyarakat*, 5(3), 955–967.
- Perdana, R., & Suswandari, M. (2021). Numerical Literacy in Thematic Learning for Upper Grade Elementary School Students. *Absis: Mathematics Education Journal*, 3(1), 9–15.
- Purwanti, E. (2021). Preparing the Implementation of Merdeka Belajar – Kampus Merdeka Policy in Higher Education Institutions. *Proceeding of 4th International Conference on Sustainable Innovation 2020-Social Humanity, and Education (ICoSIHESS 2020)*, 518(ICoSIHESS 2020), 384–391. <https://doi.org/10.2991/assehr.k.210120.149>.
- Putri, Putri, Feby Thalita (2022) The Implementation of Kampus Mengajar Program: A Case Study of English Department Students in Jambi University. S1 thesis, Universitas jambi.
- Reder, S., Gauly, B., & Lechner, C. (2020). Practice makes perfect: Practice engagement theory and the development of adult literacy and numeracy proficiency. *International Review of Education*, 267–288. <https://doi.org/10.1007/s11159-020-09830-5>
- Rochana, R., Darajatun, R. M., & Ramdhany, M. A. (2021). Pengaruh Implementasi Kebijakan Kampus Merdeka terhadap Minat dan Keterlibatan Mahasiswa. *Journal of Business Management Education (JBME)*, 6(3), 11–21.
- Rosita, D. A., & Damayanti, R. (2021). Pelaksanaan Program Kampus Mengajar Perintis Pada Sekolah Dasar Terdampak Pandemi Covid-19. *Prima Magistra: Jurnal Ilmiah Kependidikan*, 2(1), 42–49. <https://doi.org/10.37478/jpm.v2i1.852>
- Sá, M & Serpa, S. ( 2018) Transversal Competences: Their Importance and Learning Processes by Higher Education Students. *Educ. Sci.* 8, 126.
- Sari, I. J., El Islami, R. A. Z., & Safkolam, R. (2022). Implementation of Bioinformatics Learning in Senior High School: A Systematic Review. *International Journal of Biology Education Towards Sustainable Development*, 2(2), 87–98. <https://doi.org/10.53889/ijbetsd.v2i2.164>
- Schwerdt, G., & Wiederhold, S. (2018). Literacy and growth: *New evidence from PIAAC*
- Setyawati, M., Aisyah, H., & Kusaeri, K. (2021). Developing the Problem of Numeration Literacy With Islamic Context. *MaPan : Jurnal Matematika Dan Pembelajaran*, 9(2), 347. <https://doi.org/10.24252/mapan.2021v9n2a11>
- Shabrina, L. M. (2022). Kegiatan Kampus Mengajar dalam Meningkatkan Keterampilan Literasi dan Numerasi Siswa Sekolah Dasar. *Jurnal Basicedu*, 6(1), 916–924. <https://doi.org/10.31004/basicedu.v6i1.2041>
- Situmorang, A. S., & Sinaga, D. F. (2022). Analysis of numeracy literacy skills of students on

the Pythagorean Theorem material in Class VIII UPT SMP Negeri 7 Medan TA 2021/2022. *International Journal Of Humanities Education and Social Sciences (IJHESS)*, 2(1).

Sointu, E. T., Valtonen, T., Hirsto, L., Kankaanpää, J., Saarelainen, M., Mäkitalo, K., Smits, A., & Manninen, J. (2019). Teachers as users of ICT from the student perspective in higher education flipped classroom classes. In *Seminar.net* (Vol. 15, Issue 1, pp. 1–15). <https://doi.org/10.7577/seminar.3402>

State of Victoria. (2017). *Literacy and Numeracy Strategy*. Melbourne: Department of Education and Training.

Suleimen, N. (2019). Appraising the attitude towards information communication technology integration and usage in Kazakhstani higher education curriculum. *Journal of Information Technology Education: Research*, 18, 355–378. <https://doi.org/10.28945/440310.28945/4403>

Suprawata, I. G., & Riastini, P. N. (2022). Gender and Educational Level: Analysis of Elementary School Teacher Numerical Skills. *Jurnal Ilmiah Sekolah Dasar*, 6(2), 236–243. <https://doi.org/10.23887/jisd.v6i2.42501>

Väisänen, S., & Hirsto, L. (2020). How can flipped classroom approach support the development of university students' working life skills?—university teachers' viewpoint. *Education Sciences*, 10(12), 1–15. <https://doi.org/10.3390/educsci10120366>

Vasathakumari, S. (2019). Soft Skill and its Application in Work Place. *World Journal of Advanced Research and Reviews*, 03(02), 066–072. <https://doi.org/10.30574/wjarr>

Waldi, A., Putri, N. M., Indra, I., Ridalfich, V., Mulyani, D., & Mardianti, E. (2022). Peran Kampus Mengajar dalam Meningkatkan Literasi, Numerasi dan Adaptasi Teknologi Peserta Didik Sekolah Dasar di Sumatera Barat. *Journal of Civic Education*, 5(3), 284–292. <https://doi.org/10.24036/jce.v5i3.725>

Wolla, S. A., & Sullivan, J. (2017). Education, Income, and Wealth. In *Page one Economics*. available at <https://fred.stlouisfed.org/graph/?g=7yKu>.

Wrahatnolo, T., & Munoto. (2018). 21st Centuries Skill Implication on Educational System. *IOP Conference Series: Materials Science and Engineering*. <https://doi.org/10.1088/1757-899X/296/1/012036>