Vol. 14, No. 03, pp. 1914-1929, 2024 DOI: 10.23960/jpp.v14.i3.2024130

Jurnal Pendidikan Progresif

e-ISSN: 2550-1313 | p-ISSN: 2087-9849

http://jurnal.fkip.unila.ac.id/index.php/jpp/

Strategies for Improving 21st Century Competencies in Secondary Schools in Indonesia: A Systematic Literature Review

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Received: 29 November 2024 Accepted: 13 December 2024 Published: 22 December 2024

Abstract: Objective: This study aims to evaluate strategies to improve 21st century competencies in secondary schools in Indonesia with a focus on the implementation of learning curricula and digital literacy mastery. 21st century competencies include critical thinking, creative, communication, collaboration, character development and citizenship skills. This study will answer research questions related to what research results are found in reference articles regarding strategies to improve 21st century competencies of secondary school students in Indonesia, what factors influence the improvement of 21st century competencies of secondary school students in Indonesia, and how policies related to strategies to improve 21st century competencies of secondary school students in Indonesia. **Methods**: *Systematic Literature Review* (SLR) with PRISMA approach is the method used in this research, through identification, screening, eligibility and inclusion stages to analyse 42 relevant articles from 2017-2024 sourced from Google Scholar. **Findings**: The results show three main factors that influence the improvement of students' competence: teachers' competence, curriculum innovation and learning methods, and the role of digital technology. Teacher competence in digital literacy is the key to successful technology-based learning. Flexible, adaptive and digitisation-based curriculum innovations can encourage mastery of 21st century competencies, especially through innovative *learning* methods such as *blended* learning and *project-based learning*. In addition, digital technology plays an important role in facilitating interactive and effective learning, although uneven infrastructure remains a challenge in Indonesia. **Conclusion:** This study suggests the integration of digital literacy in the curriculum, the improvement of teachers' competence through continuous training, as well as the development of technology infrastructure in schools. Education policies that support curriculum flexibility and technology adoption are believed to improve students' readiness to face global challenges. This study provides strategic recommendations for educators, policy makers and educational institutions in designing learning systems that are relevant to the digital era.

Keywords: curriculum, digital literacy, 21st century competencies.

To cite this article:

Hilmiatussadiah, K. G., Ahman, E., Disman, & Dahlan, D. (2024). Strategies for Improving 21st Century Competencies in Secondary Schools in Indonesia: A Systematic Literature Review. *Jurnal Pendidikan Progresif*, *14*(3), 1914-1929. doi: 10.23960/jpp.v14.i3.2024130.

INTRODUCTION

The growing digital era makes digital literacy one of the crucial components that students must have in facing the challenges of the 21st century. Digital literacy which includes competencies ranging from accessing, understanding, evaluating and utilising digital-based information critically and ethically (Musfikar et al., 2023). Previous research shows that the digital literacy competence of high school students in Indonesia faces a variety of challenges and obstacles, such as in the study by Oktavia dan Hardinata (2020) that only 35% of high school students have adequate digital literacy skills, while most others are still at the stage of

basic skills such as absorbing information and using technology for the learning process. In addition, according to the results of a survey by PISA (Programme for International Student Assessment), the literacy skills of students in Indonesia in 2018 including digital literacy are at a low level when compared to other countries in Southeast Asia. (Hewi & Shaleh, 2020).

Digital literacy is inextricably linked to the development of 21st century competencies, which are key for students to succeed in an era of globalisation driven by rapid technological advances. The use of technology is known to have a positive relationship in enhancing aspects of 21st century competence (Sang et al., 2018). 21st century competencies consisting of critical thinking skills, creative thinking, communication skills, collaboration, character development, and citizenship are all needed to meet the challenges of this era. In line with research by Burrus (2013) It is known that the most important competencies for students to have in this era are the ability to solve problems, think critically, collaborate, think creatively and innovatively, and skills in communication, all of which are part of 21st century competencies.

In this technology-dominated era of globalisation, digital literacy is the foundation for improving critical thinking skills by processing and evaluating information to find solutions to problems. Then, the ability to think creatively in using and utilising technology for work, to the ability to communicate and collaborate in person or through digital platforms. This is supported by research that 21st century competencies are highly dependent on one's ability to adapt and utilise technology in a variety of situations, such as work, education, and professional. In addition, according to Churchill et al. (2013) Effective use of technology in education can encourage student engagement in the learning process.

Students' digital literacy significantly affects their ability to communicate and collaborate based on digital technology. (Syahfira et al., 2023) and (Kirana et al., 2024). It is recognised that good communication skills are the most difficult skills to acquire by students. Therefore, efforts are needed to improve this competence, one of which is by strengthening digital literacy.

The presence of digital literacy is the foundation that integrates these six 21st century competencies. Strong digital literacy support for students can create creative solutions to the challenges of this era, collaborate across cultures and regions through digital platforms, and convey their ideas widely (Rahmah et al., 2024). In line with research by Weninger (2017), that integrating media and digital literacy into the learning curriculum can improve students' 21st century competencies through customisation to local needs. Therefore, it is important to evaluate and strengthen digital literacy as a step to prepare a competent generation that is ready to compete in the 21st century.

The presence of technology has certainly brought about debates, such as concerns about the dangers of dependence on technology and the role of teachers that could be replaced. However, according to Greenlaw (2011) The presence of technology and digital learning are important things that need to be integrated. As a teacher, we need to balance traditional pedagogical skills and contemporary approaches to ensure students are moral, responsible and engaged in experiential learning, which is aligned with the development of 21st century competencies.

In an effort to improve students' 21st century competencies, collaboration between the academic world and various sectors is needed to produce creative solutions and new experiences for students based on contextual not just textual. In addition, the learning process needs to emphasise aspects of direct experience and project-based learning. (López, 2021). Furthermore, research by (Tijsma, 2020) It is recognised that preparing students with 21st

century competencies requires clear learning objectives, collaboration and a learning design that is tailored to students' abilities and builds on their experiences.

Indonesia's secondary school education system is faced with different challenges in improving students' digital literacy. Limited technology infrastructure is a challenge for public schools, in contrast to private schools and boarding schools which face more challenges in terms of learning approaches and access to resources (Harapan, 2022). Singapore, on the other hand, has developed a learning process that utilises visualisation tools to support 21st century competencies. Through the use of digital tools, students can explore and improve critical thinking skills and increase student participation in the learning process. (Tan et al., 2016).

This research uses the literature study research method, this technique can provide an overview to evaluate the factors that influence curriculum implementation, starting from the quality of educational inputs including resources and teaching materials. Then, in terms of the learning process involving technology integration and the results or outputs, namely mastery of digital skills and improvement of 21st century competencies. The six 21st century competencies are the main focus of this evaluation, as digital literacy is the basis for honing these skills.

The questions that can be answered in this study are what research results are found related to improving the 21st century competencies of secondary school students in Indonesia, what factors affect the improvement of 21st century competencies of secondary school students in Indonesia, and how policies related to strategies to improve 21st century competencies of secondary school students in Indonesia.

This research aims to contribute recommendations for policy makers, educators, and educational institutions in planning and implementing a better curriculum that is adaptive to changing times as a strategy to improve 21st century competencies.

METHOD

Research Design

In this research, the *Systematic Literature Review* (SLR) method was used. This method aims to identify, analyse and synthesise literature studies relevant to the research topic. The literature review focuses on the search strategy in exploring as much relevant literature as possible and then analysing its relevance to the research topic (Arief & Sugiarti, 2022).

Search Strategy

The data collection process in this study used the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) framework to identify literature and scientific articles in a systematic, transparent manner, and avoid duplication of studies (Sarkis-Onofre et al., 2021). By using the PRISMA method, systematic review reporting will be more complete and accurate and assist researchers in compiling quality reviews (Agrawal et al., 2024) The following is the analysis process using the PRISMA method:

Based on the PRISMA diagram above, it is known that the literature review analysis process consists of 4 main stages, including:

1. Identification

At this stage, the literature search process using the Google Scholar database resulted in 100 articles. Then, these articles were entered into the reference management platform for further processing.

2. Filtering

The screening stage with exclusion criteria included publication periods starting in 2017, non-Indonesian language articles, and articles sourced from conference papers, book chapters, or conferences were excluded. At this stage, the

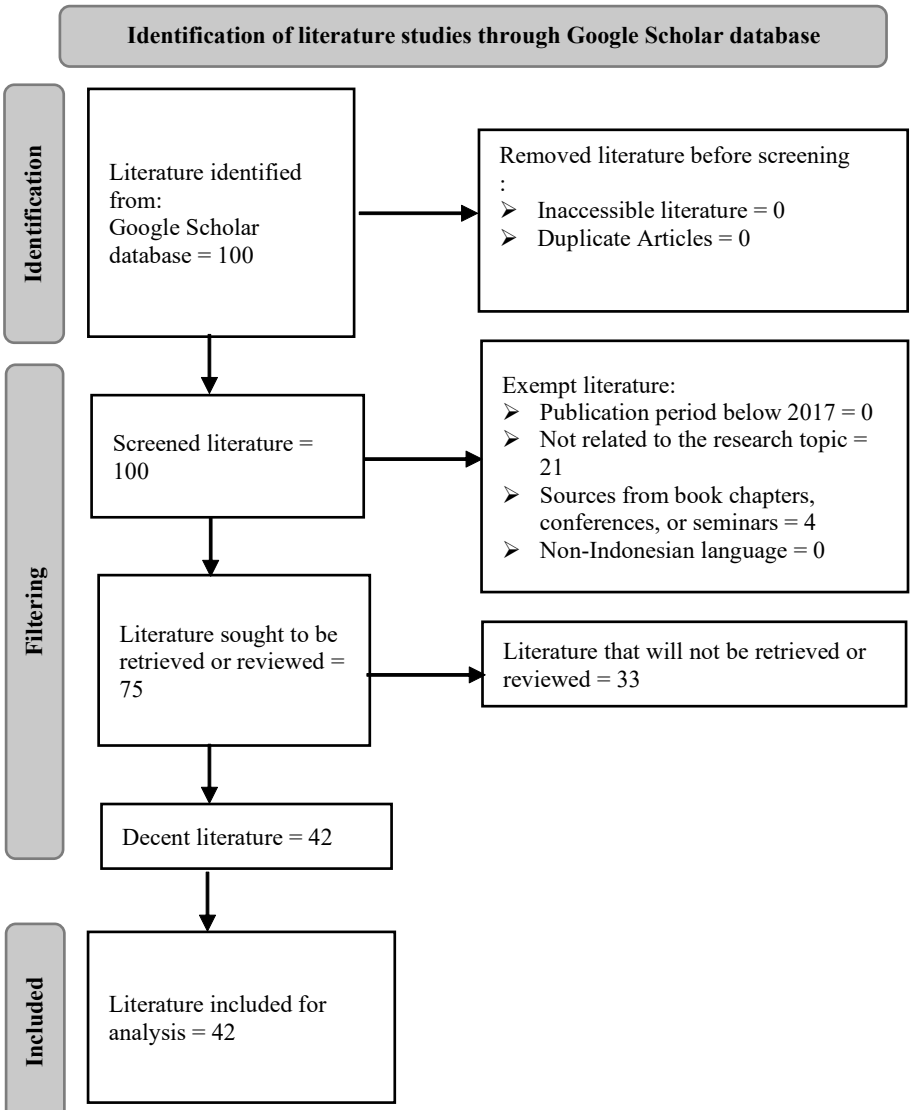

Figure 1. Stages of article retrieval

literature to be reviewed was reduced by 25 articles and 75 articles remained..

3. Feasibility

The 75 articles were then screened for eligibility by examining the titles and abstracts to determine their relevance to the research topic. Articles that did not address the topics of digital literacy, 21st century competencies and curriculum evaluation were excluded. In this process, 42 articles were deemed eligible for inclusion..

4. Inclusion

After going through the eligibility stage, 42 articles were selected that met the inclusion criteria including published from 2017 to 2024, Indonesian language articles, focus on 21st century competencies, and secondary school scope which will then be systematically reviewed.

The data that has been obtained using the *Systematic Literature Review* (SLR) method and through the PRISMA stage will then be processed further. The data processing technique

was carried out by grouping literature studies based on the main themes, research scope and findings. The results of the analysis are then presented in a structured manner to provide a comprehensive picture of digital literacy, curriculum evaluation, and its relevance in developing 21st century competencies.

Inclusion and Exclusion Criteria

To ensure the quality, relevance and focus of the studies included in this review, the screening procedure of inclusion and exclusion criteria was clearly included. The inclusion criteria consisted of literature studies that addressed 21st century competencies in Indonesian secondary schools, curriculum implementation, and digital literacy. Articles analysed were those that focused on practical applications, not just theoretical concepts (Gough et al., 2019).

As such, this criterion ensures that only articles that significantly enhance the understanding of the relationship between 21st century competencies, curriculum implementation and digital literacy will be included. Furthermore, through this approach it is designed to verify that through effective curriculum and digital literacy will have an impact on improving students' 21st century competencies which include the ability to think critically, creatively, communication, collaboration, character development, and citizenship. More detailed inclusion and exclusion criteria can be seen in Table 1.

Data Analysis

In this study, a systematic literature review approach was undertaken in the data analysis process to assess strategies for improving 21st century competencies and their relation to the implementation of the 21st century competencies learning curriculum and digital literacy. A total of 42 articles were included in the literature review as according to (Kitchenham & Brereton, 2013), The number of articles included in a systematic literature review is usually less than 50 and more than 10. Therefore, 42 articles were selected to fulfil the criteria.

The data analysis process was conducted through an evaluation of the quality of the articles based on criteria established in the literature related to research methodology. These criteria include clarity of research objectives, relevance of the topic to the research question, and quality of results presented. In assessing the quality of literature studies, the articles used were evaluated based on criteria referring to quality evaluation guidelines by Kitchenham & Brereton (2013) in the context of a systematic literature review, which includes clarity of purpose, validity and reliability of methods used, and accuracy of definitions of concepts and terminology applied in each study.

In addition, thematic analysis was used in this study. According to Braun & Clarke (2019) Thematic analysis is a method for identifying, analysing and reporting themes in qualitative data. In this study, thematic analysis was used to analyse the results of the literature found by extracting the main themes that emerged in the various studies reviewed. Identification of patterns and similarities in findings was carried out and then thematic synthesis was carried out by grouping and connecting findings from various studies based on the themes found.

Tabel 1. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusions
Year of Publication	2017-2024	Before 2017
Population	Focus on SMA and SMK students and teachers	Not high school and vocational school students and teachers

Document Type	Research Articles	Not research articles, books, book chapters, proceedings, papers, etc.
Language	Indonesian Language	Not Indonesian language
Access	Open Access	Closed Access
Purpose	Improving 21st century competence	Not 21st century competency improvement

RESULT AND DISCUSSION

Subjects and Objects of Research

The research focused only on students and teachers at the high school and vocational school levels, while some studies focused on teachers (n=27) and on students (n=20), the subjects listed in the research are the clusters of science, social science, language and vocational or vocational clusters.

Year of Publication

In terms of publication year, studies ranged from 2017 to 2024, with a total of studies published in 2017 (n=2), 2018 (n=2), 2019 (n=8), 2020 (n=6), 2021 (n=6), 2022 (n=12), 2023 (n=5) and 2024 (n=1).

Research Methods

Based on the findings of the literature study, it was found that the research articles used a variety of approaches. There was 1 study that used the pre-experimental design method (n=1). Similarly, there was 1 study using participatory action research method (n=1). There was 1 study using the survey method (n=1). Then there were 33 studies that used a qualitative approach (n=33). Then there are 2 articles with a quantitative approach (n = 2). Articles with a quantitative approach and quasi-experimental methods were 1 article (n=1). Furthermore, there were 2 studies using a phenomenological qualitative approach (n = 2) and a descriptive qualitative approach as many as 1 study (n = 1).

RQ 1: What research results were found related to improving the 21st century competencies of secondary school students in Indonesia?

Table 2 shows the range of approaches and strategies identified to improve the quality of learning and teacher competence to meet the

Table 2. Summary of research findings

No	Research Result	Author, Year of Research
1	Improving the 21st century competence of secondary school students in Indonesia by improving teacher competence	(Destiana & Utami, 2017), (Somantri, 2021), (Fatmayani, 2022), (Widyaningrum et al., 2019), (Rahayuningsih & Muhtar, 2022), (Giantara, 2019), (Priatmoko & Dzakiyyah, 2020)
2	Improving the 21st century competencies of Indonesian secondary school students through relevant curriculum implementation	(Indarta et al., 2022), (Asy'ari & Hamami, 2020), (Sumantri, 2019), (Umam, 2021), (Mustafa & Dwiyogo, 2020)
3	Improving the 21st century competencies of secondary school students in Indonesia byapplying appropriate learning models.	(Indarta et al., 2022), (Fajri et al., 2021), (Rini et al., 2023), (Rahayu et al., 2022), (A. Fitriani et al., 2022), (Sutianah, 2021), (Amala et al., 2019)

4	Improving the 21st century competencies of secondary school students in Indonesia by enhancingdigital skills, use of technology and digitaliteration.	(Faridi & Lutfi, 2023), (Rahayuningsih & Muhtar, 2022), (D. Fitriani et al., 2023), (Rusmana, 2020), (Hidayat & Khotimah, 2019), (Aryana et al., 2022), (Rosnaeni, 2021), (M Choirul Muzaini et al., 2024), (Elitasari, 2022), (Rahayu et al., 2022), (Hasnah, 2023), (Rini et al., 2023), (Warsita, 2017), (Anggraeni & Sole, 2018)

demands of the 21st century. Pedagogic competence is recognised as a key component supporting effective learning, particularly in vocational education and other fields relevant to 21st century needs (Destiana & Utami, 2017; Somantri, 2021). Adjusting the curriculum to local and global needs, including the implementation of the independent curriculum, is considered important to equip students with relevant competencies in the digital era and society 5.0. (Indarta et al., 2022; Umam, 2021), integration of 21st century competencies, such as collaboration, communication, creativity, and problem solving, into the curriculum through strategies such as project-based learning, academic supervision, and *teaching factory* (Fatmayani, 2022; Sutianah, 2021). Digital technology is seen as a tool that support innovation in learning, teaching materials, increased interaction, as well as assessment effectiveness (Hidayat & Khotimah, 2019; Warsita, 2017; Haris et al, 2022)

RQ 2: What factors influence the improvement of 21st century competencies of secondary school students in Indonesia?

Based on the findings, it is known that in an effort to improve 21st century competencies in students, there are three main factors that influence it, namely teacher competence, curriculum and learning methods, and the role of digital technology.

The Role of Teacher Competence in Improving 21st Century Competencies

Many factors can influence the successful development of students' 21st century competencies, one of the main factors is the competence of teachers in schools. Starting from pedagogic, social, personal, professional competencies with additional digital skills are needed in creating a learning process that supports digital literacy and improves critical thinking, creative thinking, collaboration, and communication skills. This is in line with research by Destiana dan Utami (2017) that teachers' pedagogic competence needs to be continuously trained to strengthen teachers' competence in supporting the development of 21st century competencies. Furthermore, teachers must also have adequate digital competence to face curriculum transformation that is adaptive to the presence of technology. (Faridi & Lutfi, 2023). In line with research by Demissie et al. (2022) that teachers' digital competence is an important factor in supporting the development of students' 21st century competencies. Through training and a positive attitude towards technology, barriers in the process of integrating technology into learning activities can be overcome.

In its implementation, there are many challenges such as competency gaps and lack of structured training. In addition, teachers' low awareness of the need to improve competencies in the digital era hinders the transformation and integration of 21st century competencies in the learning process (Faridi & Lutfi, 2023). The changing era followed by curriculum changes and the adaptation of technology that is increasingly developing can be overcome through *workshops* or intensive training and increased academic supervision (Somantri, 2021) dan (Fatmayani, prepared for the future labour market. (McGunagle & Zizka, 2020).

teachers' technical skills in order to produce intellectually and morally competent students. Character strengths are highly relevant to 21st century competencies by focusing on teachers' interpersonal and intrapersonal development that can help students develop optimally (Lavy, 2020).

Teacher competencies must be systematically reviewed through pedagogic training, digital competency enhancement and academic supervision. Pedagogical digitalisation can be a solution to improve teaching quality to support students' digital literacy needs to improve 21st century competencies (Rahayuningsih & Muhtar, 2022). In addition, according to Pineida (2011) Continuous teacher training in teaching competencies and the latest technology needs to be emphasised. This way, teachers can be effective drivers of change in supporting a relevant and adaptive curriculum.

Curriculum Innovation and Learning Methods to Improve 21st Century Competencies

In addition to teacher competence, curriculum innovation is an important factor to support the mastery of 21st century competencies, especially in the context of digital literacy. Through an integrated curriculum approach that combines theory and practice, it can increase the relevance of learning to global needs (Asy'ari & Hamami, 2020). According to Fitriani et al. (2023) A total curriculum reform in Indonesia is necessary to address the challenges of the digital era by focusing on increased digitalisation and flexible curriculum. Educational institutions need to update the curriculum by focusing more on skills such as teamwork or collaboration, communication, and problem solving so that graduating students are better prepared for the future labour market. (McGunagle & Zizka, 2020).

According to Mróz & Ocetkiewicz (2021), In supporting the development of 21st century competencies, the focus of teaching needs to be linked to efforts to enhance student creativity through innovative learning methods.

Innovative learning methods such as blended learning can be a solution by combining traditional approaches with technology to support digital literacy (Rini et al., 2023). Other learning methods such as the project citizen-based method can help students to hone their collaboration skills, improve creativity, communication, and critical thinking. (Fajri et al., 2021).

Furthermore, through project-based learning and focusing on the application of STEAM (Science, Technology, Engineering, Art, Mathematics) approach in the learning process can enrich students' learning experience and develop 21st century competencies through critical thinking, problem solving, collaboration, and creativity. (Hadinugrahaningsih et al., 2017).

In addition, *experiential learning* methods can be implemented to support practical learning so that students can understand more because the learning process is based on contextual experiences, this can improve 21st century competencies (Priatmoko & Dzakiyyah, 2020). Similarly, the transformative learning approach in order to build student character through interactive learning is also related to the development of 21st century competencies (Rahmawati, 2018). Interactive learning can also be achieved through the flipped classroom method, which is known to have the potential to improve 21st century competencies by transforming classroom dynamics to suit the learning context. In this flipped classroom method, students will be actively involved as the teacher acts as a facilitator (Latorre-Cosculluela, 2021).

Innovation through such approaches, methods and curricula is important in supporting effective learning processes and promoting learners' 21st century competencies. In order to produce optimal outputs, it is necessary to adjust

and change the curriculum towards digitalisation, including flexible curriculum design so that students can develop 21st century competencies more deeply. (Cholilah et al., 2022). Approaches such as interdisciplinary curriculum can be applied given its relevance as it can align learning with 21st century competencies. Integrating various disciplines including technology into it will provide a broader understanding for students. Through this interdisciplinary curriculum approach, it can provide a holistic approach to teaching students with relevant learning objectives and encourage them to connect knowledge from various fields and improve communication skills (Drake & Reid, 2020).

The results of curriculum implementation must be evaluated to ensure its success. Outputs in the form of digital literacy skills and 21st century competencies are the main indicators of success in curriculum implementation. Research by Anggraeni dan Sole (2018) highlighted the importance of digital infrastructure to support student collaboration, so curriculum evaluation can provide strategic insights to improve the quality of education and equip students with 21st century competencies.

The Role of Digital Technology in Enhancing 21st Century Competencies

Digital technology has a crucial role in developing digital literacy and 21st century competencies. Technology can help and facilitate teachers to overcome learning loss and improve the quality of learning (Haris et al., 2022). Technology can be an important input that strengthens the digital learning process and promotes 21st century competencies in students. This is supported by research Rusmana (2020) which highlights that integrating digital skills in the curriculum can encourage learners to be better prepared for the challenges of the modern world. Thus, it is important to help students understand the of technology for their lives. (Pineida, 2011).

Indonesia's uneven infrastructure and relatively low literacy levels make implementing technology in the learning process to improve 21st century competencies a challenge (Elitasari, 2022). The need to strengthen school infrastructure needs to be fulfilled to support students' learning process as well as the fulfilment of technological devices and the use of ICT to develop critical thinking skills and enhance students' creativity (González pérez & Ramírez montoya, 2022).

In addition, improving educational infrastructure and technology training for teachers can help make critical thinking skills-based assessments relevant to the needs of the 21st century curriculum (Rosnaeni, 2021). In line with research by (Hidayat & Khotimah, 2019) that utilising digital technology, such as online learning platforms, can improve the interaction and effectiveness of learning activities, provided that the digital literacy of teachers and students needs to be improved. Furthermore, the integration of ICT (Information and Communication Technology) in the teaching of each subject is necessary to improve students' competence. (Pineida, 2011). Research by (Ahmad et al., 2013) It is known that the application of ICT in the learning process can focus on cognitive and technical skills as well as the development of critical thinking skills, to problem solving. Pedagogy technology-based learning can be designed by teachers to design learning that develops the 21st century with the integration of ICT and consideration of contextual factors that can influence learning design, such as student needs and characteristics, technology availability, socio-cultural conditions, and learning environment. (Koh, 2015).

The role of technology can be measured by the extent to which these inputs can support the learning process to produce outputs in the form of adequate digital literacy. Thus, the implementation of technology in different types

of schools can be optimised to support the mastery of 21st century competencies equally.

RQ 3: What are the policies related to strategies to improve the 21st century competencies of secondary school students in Indonesia?

21st century competencies that include critical thinking, creative thinking, collaboration and communication are skills that students must have. Therefore, there is a need for policies that lead to increased student competence by integrating technology in the learning process to flexible curriculum transformation according to the needs of the times. Based on the results of the literature review, several things can be done by teachers, government, and policy makers in an effort to encourage the development of increasingly complex 21st century competencies.

1. Promote digital literacy. This can be done through policies such as integrating digital literacy in the curriculum. In its implementation, regular training on the use of technology for teachers needs to be improved, in addition to creating a supportive environment for students to be able to access technology effectively.
2. Promoting 21st century competencies through appropriate learning methods In order to promote student competencies, the existing curriculum should focus on developing 21st century competencies. This
3. can be done through a variety of learning methods that support the process of creative thinking, critical thinking, character development, citizenship, collaboration and communication. Approaches such as *project-based learning, problem-based learning, field trips, forum group discussions,* and *experiential learning* can be applied.
4. Curriculum evaluation and transformation. The curriculum used should be flexible and adaptive to changes in society and according to needs. The government or policy makers must continue to monitor and evaluate the curriculum and continue to develop and update it to make it more relevant to the challenges and needs of students in the future.
5. Ensure adequate infrastructure. The government should ensure that all schools have the same infrastructure and access to technology. Budget allocation needs to be done effectively. With adequate infrastructure support, improving 21st century competencies through the learning process will be easier.
6. Teacher competency development. Teachers are an important element and are directly related to the learning process involving students. Therefore, teachers must have both pedagogical and professional competencies in order to deliver the material well. Teacher training and certification needs to be carried out, especially the mastery of 21st century competencies, digital literacy and the use of technology. The government or institutions can organise special training programmes for teachers to improve their competencies such as the latest techniques in learning that are increasingly developing.

Limitations and Further Research

One of the shortcomings of this research is that the source of the articles used is only taken from Google Scholar. This is due to the focus of the research which is specifically aimed at students in Indonesia who use the applicable Curriculum, so the scope of the literature analysed is limited.

In addition, the articles referenced are only from 2017-2024, so it is possible that it cannot cover all relevant research outside of that year. for this reason, future researchers are expected to expand the range of research references.

■ CONCLUSION

The importance of flexibility and adaptation in curriculum design to deal with rapid social and technological changes in education. The relevance of curriculum effectiveness that matches the needs

of students and society in achieving learning objectives. In today's digital age, mastery of digital literacy, critical thinking skills, collaboration and creativity are more important than mere memorisation of facts. A relevant curriculum should include lessons, methods and experiences that prepare students for global challenges, such as digital transformation, automation and environmental sustainability.

21st century competencies, such as collaboration and technology-based communication, rely heavily on digital literacy. In collaboration, digital literacy enables students to work together effectively through various digital platforms, such as collaborative software, video conferencing or shared documents.

Learning methods that involve real projects and hands-on experiences are very effective to improve students' abilities, especially 21st century competencies such as critical thinking, creativity, communication, and collaboration. Learning approaches and models that can be used effectively to actively involve students in the learning process are *project-based learning, blended learning, and transformative learning*. Students are not only recipients of information, but also active, creative and reflective participants. These methods help them understand concepts better, apply knowledge in a real-world context, and prepare them for global challenges.

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