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Progress and Development of Research on Method and Media of Learning Geography Across Country: A Systematic Literature Review

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Abstract

Education is a tool that can shape character and develop an individual's critical thinking to be able and will continue to evolve with the times. In this study, we present various information about the progress and development related to learning and teaching models in the last two decades in various countries. The research method used is systematic literature review using PRISMA approach. The keywords used determined by the PICO method. The data was obtained through the Scopus database with the criteria of journal articles, research results, books, and conducted at the junior high school-high school education level in various countries. There were 328 documents that found and 202 documents were selected that met the criteria to continue to the review stage. This research found that the learning methods used are different every year due to adjustments to technological advances. Each country has different teaching and learning models that follow the type of mindset and characteristics of children. In 2000-2024, there were publications in 10 countries and an increasing trend of publications with peak productivity in 2019 and 2024. Overall, the teaching and learning models used in various countries have changed to adapt to the progress and development of the times.

Keywords: Teaching model; learning model; educational progress

Introduction

The global attention put towards improving quality and the outcomes of learning has been accompanied by the rapid growth of teaching models. There is a constant effort being made to improve and solve the core problems of education such as a lack of resources, the need of human interaction, the need of psychological factors. One of the pivotal concepts is Cognitive Load Theory, which states human working memory is limited and poorly designed instruction can hamper understanding. Therefore, modern learning strategies aim to balance the cognitive load by managing intrinsic load (material related to the topic) and optimizing germane load (unnecessary distractors) while optimizing mental effort. Improving the efficiency of cognitive resources

motivates learning, cuts down student frustration, boosts student confidence, and supports the retention of knowledge (Sweller, van Merriënboer, & Paas, 1998).

Advances in technology and globalization have significantly transformed education. In many countries, the use of technology in education, such as virtual and augmented reality learning, has shown promising results in improving learning effectiveness. This learning model supports interaction between teachers and students and facilitates real-time assessment, which is crucial for developing students' skills. The Technology Acceptance Model (TAM) theory, developed by Davis (1989), supports this transformation. TAM explains that acceptance of technology in an educational context is influenced by perceptions of technology's ease of use and usefulness in improving learning performance. Additionally, technology-based learning approaches align with constructivist learning theory, which emphasizes the importance of active, contextual learning experiences that can be optimally facilitated through immersive technologies, such as VR and AR (Vygotsky, 1978).

The teaching and learning models in Indonesia and those in various countries will certainly be different according to the conditions experienced in that country. Teaching and learning models will continue to develop following the technological advances that occur from time to time. Teaching and learning methods must always be developed and adapted to technological advances so that students' skills in using technology are not left behind and they are able to face challenges in the era of globalization (Effendi, D., & Wahidy, A. 2019). In previous research, differences and similarities in teaching and learning methods between Indonesia and one comparison country have been investigated.

In this paper, we do research about teaching and learning methods between Indonesia and various countries with Systematic Literature Review. Metode SLR digunakan untuk mendapatkan hasil secara detail mengenai studi pengajaran dan pembelajaran yang dilakukan di Indonesia dengan negara-negara yang ada di dunia. Penelitian ini dapat membantu negara Indonesia untuk lebih berkembang di bidang akademik terutama dalam hal metode pengajaran dan pembelajaran.

In this paper, we do research about teaching and learning methods between Indonesia and various countries with Systematic Literature Review. The Systematic Literature Review method is used to obtain detailed results about teaching and learning studies conducted in Indonesia and other countries around the world. This research can help Indonesia develop further in the academic field, especially in terms of teaching and learning methods.

Method
Data Collection and Analysis

This article employs the systematic literature review (SLR) method, which aims to gather and analyse findings from various primary studies to address predetermined research questions. This secondary research method synthesizes results from multiple primary studies to offer a comprehensive overview of a specific topic. The initial step of the SLR method utilizes the PICOT framework, which encompasses research questions regarding teaching and learning methods. The question formulated using the PICO method is: "What teaching and learning methods are utilized in different countries?" The research questions pertain to Population, Intervention, Comparison, and Outcome. Applying these criteria aids in developing focused and relevant research questions aligned with the study objectives.

Tabel 1. PICO framework for formulating the study problem

PICO Element	Definition

Population	Research on teaching and learning models in various countries	How is research on teaching and learning models conducted in various countries? Which countries are chosen as research locations?
Intervention	The results of research on teaching and learning models in various countries over time	What progress has been made in research on teaching and learning models over time?
Comparison	Various types of teaching and learning models that are the subject of research in various countries	How has research on various teaching and learning models been conducted over time?
Outcome	Summary of research progress on teaching and learning models in various countries	What are the achievements of research on teaching and learning models in various countries over time?

The criteria used in sorting the documents used were (1) journal articles, (2) research articles, (3) books, (4) research at the SD-SMA level, and (5) conducted in various countries (6) geography learning subjects. If the document did not meet the criteria, then the document was not used and did not proceed to the review stage. The first stage of document sorting uses the screening stage to eliminate documents that do not meet the criteria. Documents that are not used are documents that are not relevant to the topic being discussed and documents whose study topics are at primary school and university levels. The next stage is review using the PICO method.

Document that have passed the screening stage and are in accordance with the predetermined criteria will enter the review stage. The data sources used were obtained through the Scopus database and analyzed using the PRISMA method with the PICO framework. The following is a diagram of the systematic literature review procedure with the PRISMA method, see Figure 1.
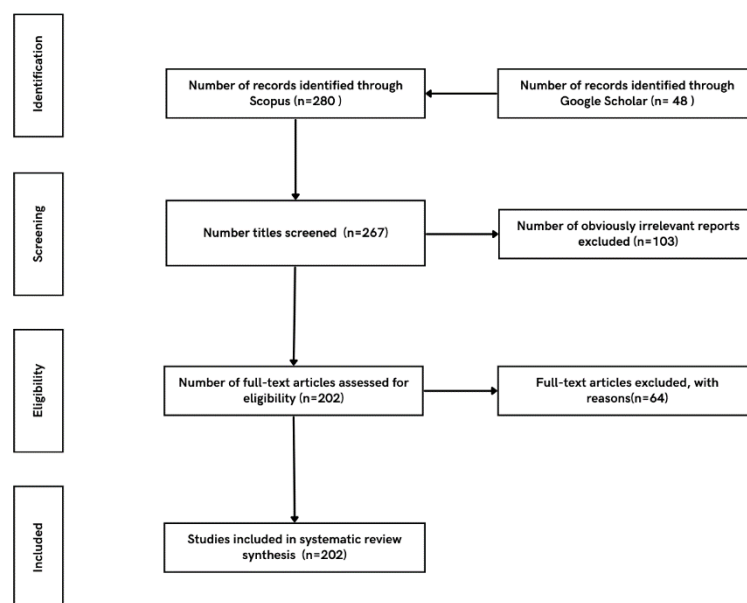

Figure 1. PRISMA flowchart of a systematic literature review procedure. Adapted from Laresti et al. (2024).

The Study Area

The main focus of this research is to review the progress and development of teaching and learning models in various countries. The teaching and learning models reviewed are branches of geography or in general, social science. Several countries do not implement the geography curriculum at the elementary, junior, and senior high school levels, so the researchers took several articles that contain teaching and learning models in the social science branch that contain material about geography. As written by Riyana, C. (2008) in his paper Japan, Korea, and China do not provide a geography subject curriculum, but there are social science subjects given.

In this paper, we present the result of a literature review of learning methods in Indonesia and other countries in Asia, Europe, Australia, Africa, and America. This research aims to examine the progress and development of teaching and learning methods in various countries, which are then compared with the methods developed in Indonesia. With this research, it is hoped that the Indonesian government can explore and adopt best practices from abroad that can improve the education system in Indonesia, with the hope of producing the next generation that is better in integrity, creativity, and critical thinking skills.

Result

The trend of development and progress in research on teaching methods and learning media indexed by Scopus in various countries in the last 20 years shows an increase and decrease in the number of publications from year to year. The research data was collected from 2000 to 2024. In 2000, there were 4 publications and in 2024 there were 9 publications. The highest number of publications was in 2016 with 26 publications. The lowest number of publications was in 2005 with 2 publications. Figure 2 showed the statistic of document on Scopus in the last 20 years.
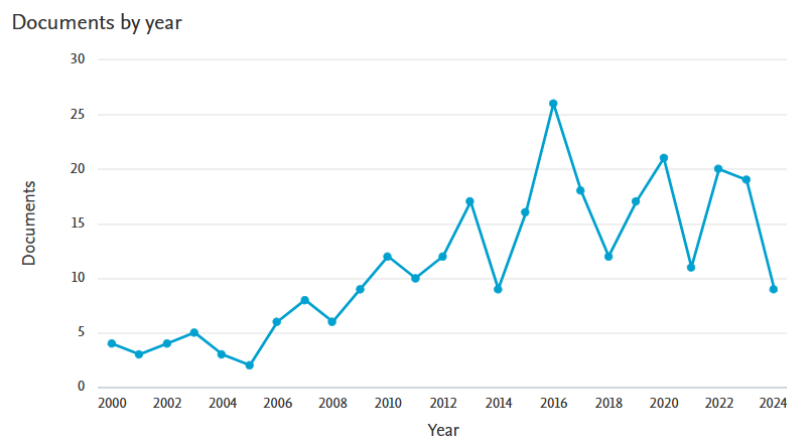

Figure 2. Number of publications on the Progress and Development of Research on Geography Teaching Methods and Learning Media in Various Countries indexed in the Scopus database in the last 20 years.

Publications in the Scopus database were found on six continents, that is America, Oceania, Australia, Asia, Africa, and Europe. Furthermore, data with international and unknown country categories were also found. The country with the most publications was Turkey with more than 10 publications. Figure 3 illustrates the worldwide distribution of publications across different countries over the past two decades with the corresponding number of publications for each nation provided in the legend.
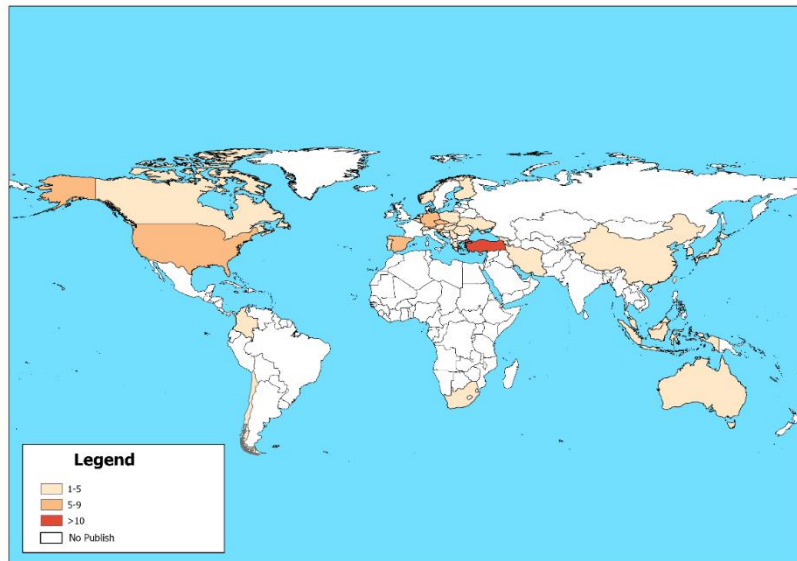
Figure 3. Number of Published the Progress and Development of Research on Teaching Methods and Learning Media in Geography in Various Countries Indexed in the Scopus Database in the Last 20 Years.

This research discusses the Progress and Development of Research on Teaching Methods and Learning Media in Various Countries, so researchers conducted research through Scopus publications in the span of 2000-2024. The top five most publications are in 2016 (26 publications), 2020 (21 publications), 2022 (20 publications), 2023 (19 publications), and 2017 (18 publications). The most publications in Scopus are publications with the subject of Social Science (51.3%), Earth and Plane (17.1%), Environmental Science (8.2%), Computer Science (7.5%), and Engineering (2.7%). The types of documents obtained by researchers are documents with the types of Article (71.7%), Conference Paper (9.3%), Book Chapter (9%), Book (4.7%), and Review (4.7%). Figure 3 shows the subject of documents published on Scopus.
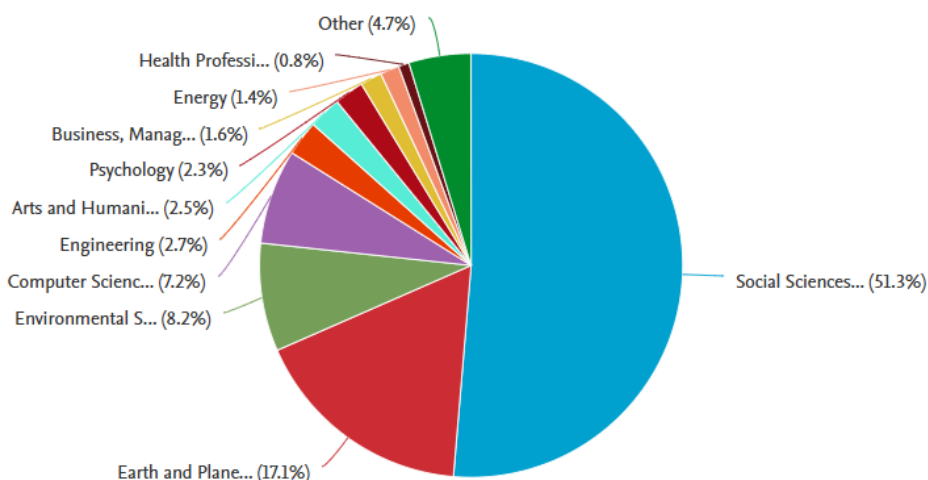

Figure 4. Number of publications on the Progress and Development of Research on Geography Teaching Methods and Learning Media in Various Countries by Subject Research Area indexed in the Scopus database.
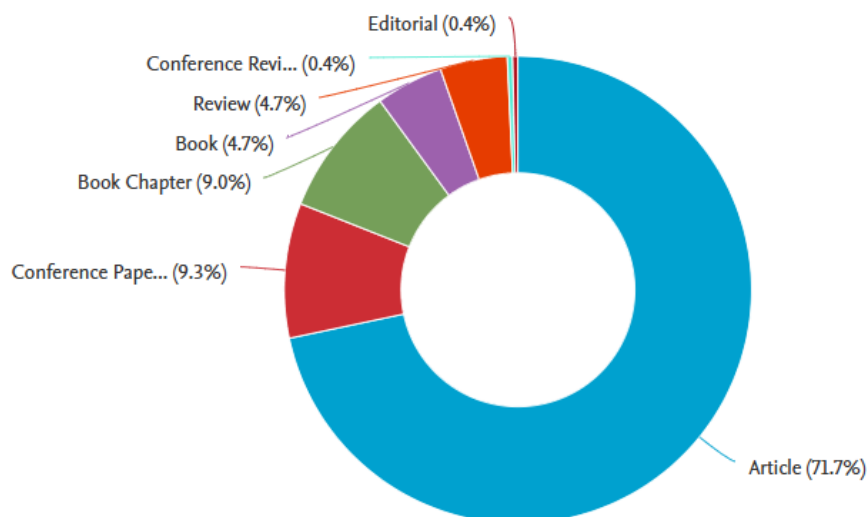
Figure 5. Number of publications on the Progress and Development of Research on Geography Teaching Methods and Learning Media in Various Countries by Publication Type indexed in the Scopus database.

Researchers conducted a search in Scopus using three keyword clusters. The keywords that became the main goal of the researchers and became the main cluster in the search were the keywords "Learning Model" or "Learning Media". The second cluster in the search focused on the object of research conducted by the researcher, namely "Learning", "Teaching", and "Geography". The third cluster in the search used the keywords "Secondary School" and "Indonesia" as the focus of the researcher's location in the study.
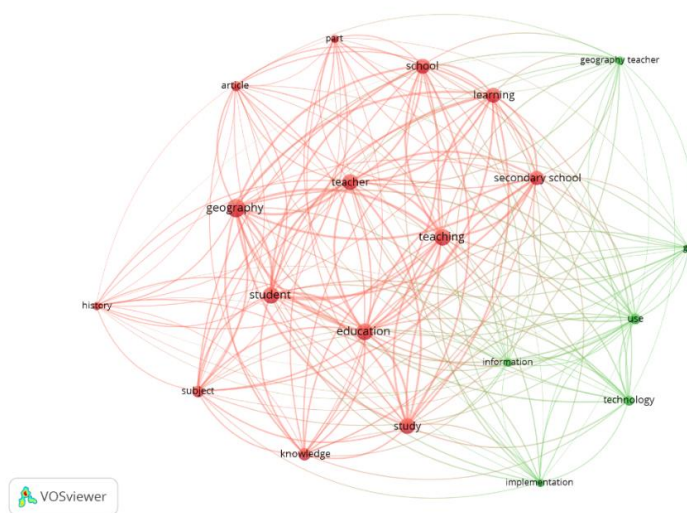

Figure 6. Various topics discussed in the study of research on The Progress and Development of Teaching Methods and Learning Media of Geography.

Based on Figure 6 for the visualization of research on the progress and development of geography teaching methods and learning media in different countries with Vosview, it highlights the important role of teachers, technology, and student experience. The main focus lies on the role of teachers in implementing teaching methods in secondary schools, while the use of technology, such as GIS, is a growing trend in facilitating interactive geography learning. In addition, cross-

disciplinary learning with other subjects, such as history, is also being implemented to provide a more holistic learning experience. This research reflects significant advances in the use of technology-based learning media as well as approaches that pay attention to student response and engagement.
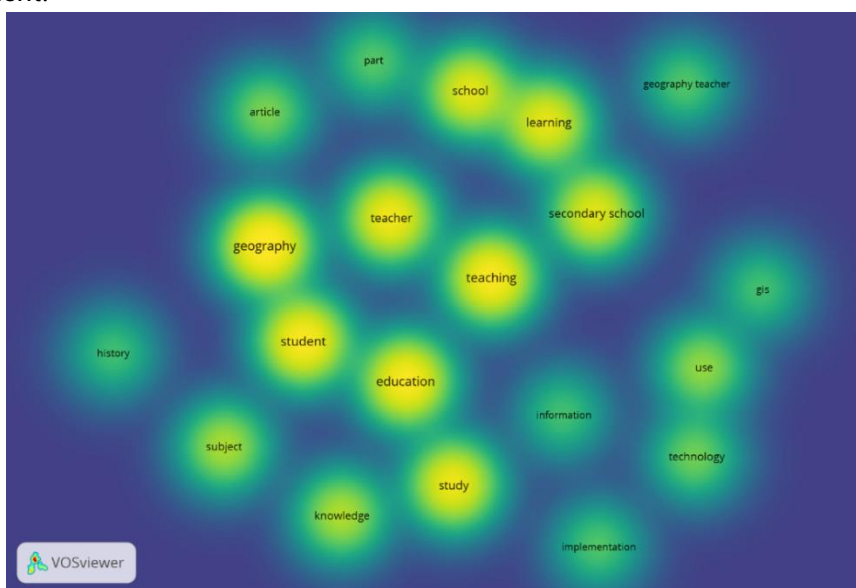

Figure 7. Various topics discussed in the study of Progress and Development of Research on Teaching Methods and Learning Media of Geography Heatmap Version.

In the second decade of 2011-2019 there were 17 publications. Demicri, A. (2012), explained in his research that the implementation of GIS can improve students' spatial analysis, allowing them to understand and analyze geographic data well, because GIS can make geography learning more interactive and interesting by allowing students to participate in field activities and relevant projects. However Demicri, A. (2013), says that GIS is an important learning tool, but its effectiveness depends on planning, motivation, support, resources, time, and enthusiasm, especially from teachers. Singh, S. S. B., (2016) found that GIS-based teaching has a more positive effect compared to traditional teaching methods in increasing learning motivation, the results show that GIS-based teaching is more effective in increasing student motivation and achievement compared to traditional methods. In addition to GIS, Xiang X. and Liu Y. (2017), found the use of Google Earth significantly improved students' ability to identify and analyze spatial and temporal changes. Google Earth can offer students more opportunities to observe and infer changes, thus their understanding of the dynamic and complex nature of change. Research related to the rationale behind the use of SV-IVR in geography learning, the proposed direction for adopting SV-IVR in the educational context in Hong Kong. This research is still in its infancy (work in progress) so has not yet produced final findings (Jong M.S.-Y. et al. 2019).

Then in the third decade, that is in 2020-2024. Davied D., et al. (2020) said that this year already incorporates a combination of IoT and local sensors that appear to produce pedagogical changes in participating teachers and improved procedural skills in students. Five of six students interviewed had a very positive perception of the use of minimalist robotics in geography learning. The use of minimalist robotics changed students' interest and attitude towards learning geography to be more positive (Bikar.S.S, et al. 2020). Prediction of geospatial thinking ability found by (Xie S. 2022) students' geospatial thinking ability can be predicted with an accuracy of 81.25% using a decision tree algorithm. The nine most influential factors in predicting this ability are academic achievement in geography, gender, learning initiative, learning goals, extracurricular time spent studying geography, ego enhancement drive, and interest in studying geography. Kitagawa, K.

(2023), found that geography is often a key subject for this global agenda. However, its curriculum is an ongoing challenge in teacher education. Some researchers point out that university-based teacher education tends to neglect teacher training in implementing environmental and sustainability education in schools. In addition, there is a lack of research on how teacher education prepares geography teachers for teaching disaster risk reduction.

The research related to learning media and methods of geography published in Scopus in 2000-2010 in continental of Europe as many as 16 publication. In the range year 2000-2010, geography learning conducted in continental Europe is focused on distance learning media, utilization of technology, and utilization of game. Teaching model using Information Comutication Technology (ICT) can support the student to upgrade their skill and make it easier for them to receive geography learning materials. ICT use with appropriate technology selection and careful lesson planning can triggering changes in teacher and student interactions and student learning behavior (Karasavvidis, I., et al., 2003). The use of ICT in classroom learning can make teachers more active in communicating so that quality of education in the class can be increased (Deaney, R., and Hennessy, S., 2007). An effective ICT-based geography learing has characterized as dynamic, investigative, opens, focus on decision, focus on student, and help to develop students' thinking skills (Dixon, I., 2004).

Jeronen, E. (2001) and Picton, O. J. (2008), found that gography education with a distance method implemented in some countries in Europe, such as United Kingdom and northern Finland. Distance learning methods is designed using stereotype about poverty and rural life with imagining distant places, students have the insight to build their understanding of the imagery and diversity of distant places. The learning model using games is also developed in several countries in Europe such as Denmark and Austria. Magnussen, R., and Sorensen, B. H. (2009), found that learning methods with game media, especially in the context of geography in secondary schools are relevant to the progress and development of the times. "The Blind Mouse" is one of the educational games used as a geography learning media designed to develop and popularize cartographic skills among students so as to make cartography learning more interesting and interactive and improve students' understanding of maps and navigation skills (Dombovari, E. S., & Gede, M., 2010).

The research related to learning media and methods of geography published in Scopus in 2011-2019 in continental of Europe as many as 34 publication with the most frequently used method is ICT. Learning methods and models in this decade began to develop more than the previous decade. There are many methods used in geography learning, such as English billingual development method in geography learning, fieldwork method, Thinking Through Geography (TTG) method, Content Management System (CMS) method, Model Educational Reconstruction (MER), Peer Micro-Teaching Lesson Study (PMLS), and controversy-based learning methods. ICT learning models in this decade began to develop, there are 10 out of 34 publications discussing the use of GIS as a geography learning model. The use of GIS can help student to improve their digital skills and make them more interactive (Kac, D., 2012). Norway is a pioneer country in integrating GIS into the curriculum with the use of web atlases, Google Earth, and web-based applications as learning media (Rod, J. K., et al., 2011). The use of GIS in secondary schools in Germany shows that a quick and easy multidisciplinary approach can help students improve spatial competence and a better understanding of spatial representation (Barnikel, F., and Ploetz, R., 2015).

The development of ICT method like a use of STAGE applications can assist geography education and learning become more interactive in Slovenia (Merc, M., 2016). The development of Technological Pedagogical and Content Knowledge (TPACK) has a support of geography education and learning in teacher education so that GI teaching becomes more effective. The use of Content Management System (CMS) and Educational Reconstruction Model (MER) methods that focus on creating learning media as teaching materials for geography learning such as blank

map, graphic, and other audio-visual media can produce significant and lasting knowledge for student. The PMLS method implemented in the United Kingdom supports teacher and student development with a collaborative process that allows them to build chemistry, reflect on their placements, learn from each other's pedagogical practices, and increase subject knowledge both within and beyond their own specialties (Griffiths, J., 2016).

The research related to learning media and methods of geography published in Scopus in 2020-2024 in continental of Europe as many as 30 publication. The use of technology-based methods is still widely used in this decade. The learning and teaching methods used tend to use smartphones, tablets, and the internet to find information sources for students (Gorgodze, T., & Gudzuadze, G., 2020). Teaching methods in Europe in the 2020-2024 decade focus on developing students' literacy and thinking skills in learning geography through test questions, the answers of students, and teacher conception (Virranmaki, E., 2022). Student in Czech secondary schools are given learning tasks such as reading, selecting, using, creating and sharing using GIS applications to practice their geoinformation skills (Misarova, D., et al., 2022). Changing the teaching model of traditional field activities to interdisciplinary work projects collaborated with the utilization and development of technology can improve students' thinking skills in the geography learning process in this decade.

In the American, we found approximately 12 research documents on learning media and methods from Scopus search results. The first decade (2000-2010) focused more on the development of learning methods and the implementation of GIS technology and virtual learning. Zygulski, K., et al. (2000), conducted research in high schools in the United States on the development of geography learning methods and approaches. In 2000, the implementation of learner-centered learning began, using easily accessible digital media. Kerkski, J. J. (2003), showed research that GIS tools have been implemented in secondary schools in the United States but still low in implementation.

In the second decade (2011-2019) the topics that focus on the implementation of GIS and Google Earth in secondary schools and there is the development of learning methods that improve students' conceptual understanding. Solari, O. M. (2012), conducted research on how to use GIS tools in the education curriculum in Chile. The study showed that there was an increase in the development of students' skills including analytical skills, understanding of geography concepts, and digital skills. Hsu, H. P. (2018), revealed that Google Earth tools significantly improved students' skills in reading and understanding topographic maps. In the study, the researcher also found that there was student success in improving topographic map skills by linking 3D visualization and Google Earth.

In the last period (2020-2024), there are 2 topics of findings, that is the use of AR applications and the development of critical thinking of teachers and students through case studies. The AR application developed and implemented in the geography curriculum, successfully integrated hyperspectral remote sensing data into learning about harmful algal blooms. Learners can explore, understand, and clearly analyze the raw data of the Algae map using the application (Lindner, C., et al., 2022). Research conducted by Llancavil, D. L. (2022), is a study on the analysis of evaluation practices used by teachers of History, Geography, and Social Sciences in the Chilean region. This research aims to make teachers more critical and begin to incorporate innovative practices and focus on student learning.

There are research findings on the African continent, which were conducted in the range of 2000-2010 there were 2 studies and the range of 2011-2019 there were 2 studies. In the first decade, 2000-2010, focused more on the use of geography learning media with the help of technology such as DVDs and computer devices. In the second decade, 2011-2019, the use of GIS software for spatial geography learning began. Golightly, A. (2008), conducted research on

secondary school students in South Africa on how to use DVDs as a support for geography learning media and map work. The research successfully revealed a significant increase in learning outcomes when using DVD learning media. In the next decade there was research on GIS learning media. Britz, H.W. (2016), revealed that there was a successful improvement in the spatial ability of learners by using GIS software compared to only using traditional methods or media, this research was conducted on secondary school students in the South African region.

On Oceania continent, there are two studies that discuss media and learning methodologies, that is in 2007 and 2020. The 2 periods represented by these 2 studies have significant progress. Geodec, G. (2007), explains how the use of e-materials can improve students' understanding of geography learning content, as well as how it can increase students' participation and learning motivation. Meanwhile, research by Touitou, A. (2020), explains that there are challenges in implementing geography teaching rooted in the local environment in New Caledonia, by examining the difficulties faced by teachers in contextualizing concepts such as sustainable development and the implications of local socio-political issues in the curriculum. Both studies indicate the progress of teachers in considering the development of students' thinking in order to make meaning of geography learning.

In Australia, we found two studies. Wieser, C. (2011), conducted research that the importance of active involvement between teachers and students can affect student learning outcomes. Teachers must create an interesting learning atmosphere in order to increase students' interest in learning, and in the geography learning process, teachers must understand how to integrate the concept of geography education in geography learning. Research by Lee, S.J. (2024), this study explains that geography teachers believe geography knowledge has the power to influence students' attitudes, values, and actions. The inquiry approach is considered important in achieving educational goals.

In the World and Unknown sections, research is comprehensive across the globe and there are some studies where no specific study area is found. In the early period, the research focus was on the integration of basic technologies in geography learning. Wiegand (2006), emphasized the importance of maps, both conventional and digital, as learning tools, as well as the integration of Geographic Information System (GIS) technology to improve map use skills. Ozel (2007), examined the low level of utilization of educational technology by geography and social science teachers, emphasizing the need for increased training to improve teachers' competence in the use of technology.

Entering the 2011-2019 period, there was a shift towards more sophisticated innovative learning methods. Favier and Van Der Schee (2012), developed inquiry-based learning using GIS, which contributed greatly to the development of geography teaching methods. Mandić and Ivkov-Džigurski (2013), showed that the Problem-Based Learning (PBL) approach improved student achievement in geography. In 2019, research related to the use of mobile technology and games, such as Pokémon Go, revealed that students were more motivated and interested in mobile technology-based learning, demonstrating the potential of game integration in geography education.

In the period 2020-2024, the development of geospatial technology is increasingly prominent. Zeng et al. (2022), identified the effectiveness of GIS in teaching geographic and economic relationships, such as property prices, in secondary schools. Research by Gómez-Trigueros, et al. (2023), showed that GIS-based collaborative mapping was effective in developing digital literacy and spatial citizenship skills in students and teachers. Finally, a quasi-experimental study by Hong and Zheng (2024), confirmed that the use of GIS in geography learning not only improved student learning outcomes, but also aided the development of higher-order cognitive abilities, such as analysis and application.

With these developments, it can be seen that geospatial technologies and innovative learning methods are increasingly becoming important elements in geography teaching in various countries. The most dominant topic discussed in the first decade between 2000 and 2010 was the use of interactive multimedia in geography learning. Researches in this period tend to focus on how computer technology and multimedia can be integrated into the learning process to increase student effectiveness and motivation. Nandi (2006), conducted a study that discussed the use of interactive multimedia in the context of geography education in Indonesia, as well as how technology can present various forms of stimulus for learning. Overall, the period emphasized the importance of innovation in learning media and how interactive multimedia can contribute to improving the quality of geography education.

Then, in the second decade, between 2011 and 2019, the topic was the use of information and communication technology (ICT) in geography learning, with a focus on learning innovation and the effectiveness of learning media. Studies in this period often address innovations in teaching methods, including the use of software, multimedia applications, and digital platforms to improve students' understanding of geography materials. Many studies have explored the use of interactive media such as Google Earth and web-based learning applications to improve students' spatial thinking and learning outcomes. Research also highlights the application of information technology-based learning models, such as Creative Problem Solving (CPS) and Inquiry models, which are proven to be more effective in improving understanding of geography materials than traditional methods. Widiawati (2013) conducted research discussing the application of Creative Problem Solving (CPS) and Inquiry learning models based on information technology to improve understanding of geography material at Taruna Bakti Bandung High School. The results showed that the information technology-based CPS learning model was more effective in improving the understanding of geography material compared to the expository learning model and information technology-based inquiry. Sisdiawati & Santoso (2016) conducted research by developing interactive learning media based on Adobe Flash CS6 for geography material on human and environmental relations due to hydrosphere dynamics in class X SMA Negeri 2 Batang. Adobe Flash CS6 learning media was declared feasible to use with an increase in student learning outcomes by 16.5%, from an average score of 44.75 before using the media to 78.625 after using the media. This learning media succeeded in increasing students' activities and positive responses, as well as providing a more interactive and interesting learning experience.

The most frequently discussed topic between 2020 and 2024 is the application of innovative and technology-based learning models in geography teaching, with an emphasis on digital learning media and online learning strategies. Recent studies often evaluate the effectiveness of blended learning models, especially app-based ones such as WhatsApp and other online learning platforms, in the context of adapting to new habits during the COVID-19 pandemic. There is an increasing focus on the use of social media apps and digital platforms, such as TikTok, to improve students' critical thinking skills and learning outcomes in geography subjects. Research also shows the positive impact of using technology-based learning media, such as Google Earth, in improving students' spatial thinking skills. These studies emphasize the importance of innovation in teaching methods, including the use of modern technology to create a more interactive and engaging learning experience for students. Sasmita et al. (2021) developed Android-based learning media that can be used in learning Geography in class X High school. This study analyzed the effectiveness of the media in increasing students' reading interest, literacy, and learning outcomes in Geography subjects. The validation results show that the materials presented are relevant to the competencies that students must master and meet the demands of the curriculum. Hariyadi & Sejati (2022) conducted a research on evaluating the effectiveness of a blended learning model using WhatsApp as the main media. The results showed that students'

responses to the application of this model received an average score of 78%, which was included in the good criteria, and the effectiveness of learning reached 78%, which was also included in the effective category.

In this results section, it is presented that there has been progress or novelty in geography learning methods and media worldwide, obtained from Scopus searches, as well as research data in Indonesia sourced from Google Cendikia. From these findings, it can be observed that in the first period, between 2000-2010, some continents with developed countries were quicker to study the implementation of technology, particularly Geographic Information System (GIS), in geography learning media and methods, such as those in the Americas and Asia. In Europe and several other countries not mentioned, technology has been integrated as the primary media in geography learning. In Oceania, the use of electronic media has become increasingly popular to support the teaching and learning process. Conversely, Indonesia and some countries in Africa tend to focus on the interaction between teachers and learners, as well as the use of multimedia for geography learning. Research in Indonesia regarding the use of technology, such as Google Earth, virtual learning, learning videos, and GIS, only began to be explored during the second period, from 2011 to 2019. Compared to research in the Americas and Asia, Indonesia is 10 years behind in studying the implementation of technology, especially the use of GIS tools for geography learning. In the final period, between 2020-2024, nearly all countries worldwide conducted research on the development of geography learning methods with various media and materials aimed at enhancing students' critical thinking skills.

The results presented indicate that the advancement of media research and learning methods in Indonesia is lagging behind that of countries on other continents, including those in Asia. Therefore, it is essential to develop research on suitable, interactive, and integrated geography learning methods and media utilizing the latest technology to assist students and geography teachers in enhancing their Geography skills. This perspective aligns with the view expressed by Utami (2017), which states that the development of media and learning methods makes the educational process more engaging. Furthermore, the evolution of learning media and methods can foster a proactive and innovative attitude among students in seeking necessary learning resources. This is also connected to the opinion of Effendi and Wahidy (2019), who assert that teaching and learning methods must continually evolve and adapt to technological advancements, ensuring that students' technological skills remain relevant and that they can tackle challenges in the globalization era. However, recent observations indicate progress in quality research focused on developing learning methods to enhance learners' critical thinking skills.

Conclusion

The development of media and learning methods will always be a topic of discussion and research every year. In its development, it does not always show significant progress or novelty in media and methods, but in each period, there are innovations in the research of geography learning media and methods. In this study, we discuss how the research on media and methods of geography learning has developed year by year (2000-2024) worldwide, divided by continents: Asia, America, Europe, Africa, Oceania, Australia, and research from several countries that lack specific details, while also comparing the findings of research on the development of geography learning methods and media in Indonesia. We have divided the research development of geography learning methods and media into three periods: the first decade from 2000-2010, the second decade from 2011-2019, and the final period from 2020-2024. This study still has some limitations for evaluation. It remains focused on Scopus-indexed publications, which are considered high-quality publications. However, many publications were not fully accessible for reading their entire content, so we acknowledge that this limitation may affect the results we obtained. Future systematic

literature reviews examining the progression of learning methods and media are highly recommended to evaluate our research, as well as research indexed in Scopus and those found in Google Scholar.

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