Problems of Education Based on 21st Century Education in Indonesia

1*M Shepna Giantama, 2 Siti Nurjannah, 3 Desi Rahmawati
123Universitas Negeri Jakarta
1shepnag@yahoo.com, 2 snurjanah@unj.ac.id, 3 desirahmawati@unj.ac.id

ABSTRACT

Background

In this modern era, society has entered a period of technological advancement, where almost everyone can access the internet and utilize artificial intelligence (AI).

Purpose

This study aims to examine various problems faced by the education system in Indonesia, including infrastructure, teaching staff, efficiency, and misuse of AI technology.

Design/method/approach

his study uses a literature review or library study type of research. This approach is carried out by collecting data through searching and analyzing articles, books, or literature sources that are relevant to the topic of study.

Results

Based on the results of the literature review, it was found that the inequality of education infrastructure between urban and rural areas hampers the quality of education, especially in remote areas. In addition, teaching staff who are less trained in the use of technology and uneven distribution also affect the quality of teaching. The issue of educational efficiency is also in the spotlight, where the increasing budget has not been managed optimally. On the other hand, misuse of AI technology can have a negative impact on students' dependence on machines and reduced human interaction in the learning process.

Contribution/value

Therefore, there needs to be a concrete solution through improving infrastructure, teacher training, and wise management of technology to improve the quality of education in Indonesia.

INTRODUCTION

According to (Hasanah et al., 2022) In the era of the Industrial Revolution 4.0 which is dominated by technological advances and digitalization, efforts to instill and strengthen national character are becoming increasingly important and urgent. The flow of globalization and industrial transformation has negative impacts, such as increasing attitudes of individualism, hedonism, and materialism. If this is allowed to continue, the impact can damage the sustainability of national life, which has the potential to distance society from the noble values that reflect the nation's identity.

According to (Isma, A., Isma, A., Isma, A., & Isma, 2023) In this digital era , access to gadgets and the internet has become need main . In learning distance further away become trend . Another significant issue namely relevance and quality curriculum education . But on the other hand the role technology in Education has influence positive . According to (Santoso et al., 2024) Implementation technology this is very important and has influence big to progress organization institution education in face global competition .

Education problems in Indonesia cover various aspects which are interrelated and affect the overall quality of education. One of the main issues is that access to education is still unequal, especially between urban and rural areas. Although the government has attempted to increase access through compulsory education programs, many children in remote areas who cannot continue their education due to distance, cost and lack of infrastructure.

Many experts say that the efficiency of the education system in Indonesia is still relatively low. This can be seen from the many students who have to drop out of school because of the difficulty of continuing their education. In addition to the issue of efficiency, other challenges faced in the world of education include the relevance of the curriculum and the application of technology and innovation in the learning process.

The relevance of education itself refers to the alignment of insight, skills, and attitudes possessed by graduates with the needs of the world of work or further education. This obstacle is evident from the fact that many graduates still do not have sufficient preparation, both in terms of skills, analytical abilities, and mental readiness, to continue their education or enter the professional world.

One of the problems that often arises in the world of education today is the lack of optimization of technology and innovation. In this modern era, society has entered a period of technological advancement, where almost everyone can access the internet and utilize artificial intelligence (AI). However, unfortunately, there are still many educational institutions that have not succeeded in maximally integrating technology and innovation into the learning process.

As a result, many educational institutions are left behind in terms of technology, which has an impact on their inability to compete with other educational institutions. This condition also affects students, making them lag behind in mastering technology. Various problems in the world of education need serious attention and concrete solutions, so that the education system in Indonesia can run well and develop on par with the education system in developed countries.

Figure 1. Four Problem Main Point 21st Century Education Problems

This study aims to invite readers to understand the complexity and urgency of various problems in the world of education today. Through a deep understanding of the problem map, it is hoped that there will be a push to take concrete steps to improve the quality and relevance of education. This is done in order to realize a brighter future for future generations while supporting the progress of the nation as a whole.

METHOD

This study uses a literature review or library study type of research. This approach is carried out by collecting data through searching and analyzing articles, books, or literature sources that are relevant to the topic of study. The data collection process is carried out by searching and reading various references, either through platforms such as Google Scholar or other trusted sources. The main criteria in selecting literature are the suitability of the topic to the content of the article and the limitation of the year of publication, which is at least within the last 10 years. Thus, the sources used remain relevant and up-to-date. The stages of literature review research carried out include identifying research topics, searching literature, selecting appropriate sources, data analysis, and compiling study results. This approach aims to provide an in-depth understanding of the issues discussed based on previous studies.

RESEARCH RESULT

In the 21st century, education is faced with various important challenges that require serious attention to create a relevant, inclusive, and competitive education system. Amidst technological advances, globalization, and rapid social change, the world of education must face complex and highly relevant problems in the context of 21st century developments.

The problem Education Infrastructure

The problem infrastructure education in Indonesia includes limitations adequate facilities and infrastructure, especially in rural areas remote. Many schools lack room decent classes , internet access , and tool help learning modern. In addition , the building schools that have old and less well maintained also a threatening problem safety students . Inequality distribution infrastructure between area urban and rural the more to worsen situation This . Limitations infrastructure This impact straight to quality learning and need attention Serious For ensure equitable and quality education for all over students . Some problem main related infrastructure education includes:

1. Limitations Facilities and Infrastructure

    Many schools, especially in rural areas rural or isolated, still lack facility base like room adequate classes, sufficient tables and chairs, and tool help relevant learning. Some school even No have a decent toilet or room library for support activity learning.

2. Lack of Technology and Internet Access

    In today's digital era this, access to technology and internet are very important for support learning, good That For access material lessons, follow online courses, as well as do research. However, many schools, especially in rural areas isolated, which is not own stable internet access or device technology like computer and projector for support modern learning.

3. Quality Bad Building

    Many buildings schools that have old and not well maintained with well, even there is something vulnerable collapsed. This is naturally can endanger safety students and teachers. Conditions physique building that is not also worthy to be able to influence comfort and concentration student during the learning process.

4. Distribution Uneven Infrastructure

    There is inequality in distribution infrastructure education between area urban and rural. Schools in the city big tend own more facilities complete and modern compared to with schools in the area remote or interior which is often lacking source Power.

5. Limited Support Facilities Other

    In addition to the facilities physical, means other supporters such as laboratory, room sports, and space art is also often lacking adequate. In fact, the facilities this is very important for support development skills and interest students outside eye lesson academic.

6. Lack of Care and Maintenance

    Although a number of school own adequate facilities, many of which No can nurse or look after existing infrastructure. Lack of maintenance This can cause damage to facilities and infrastructure that should be support the learning process.

Teaching Staff Problems

The problem power teachers in Indonesia include inequality teacher quality, especially between area urban and rural areas. Many teachers in the areas less remote trained or No own adequate qualifications . In addition , the lack of number of teachers in several area , low welfare , as well as burden overwork also becomes challenge big . Many teachers don't get training quite professional , so difficult follow development method teaching latest . Lack of access to technology also limits teacher's ability in optimizing the learning process . Teaching staff or the teacher holds role central in the educational process , but various problem related power teacher in Indonesia still become significant challenges . Some problem main problem faced by the workforce teachers in Indonesia include:

1. Unequal Quality of Teachers

    One of problem main is inequality quality power teachers in various regions. In cities big , many teachers have qualifications and competencies high , while in the area remote or rural , still many teachers are lacking trained or even No own background behind adequate education For teach with effective .

2. Problem Teacher Welfare

Although has There is various effort For increase teacher welfare , still many teachers accept wages low , especially in more remote areas remote . Lack of welfare adequate This Can reduce teacher motivation for give quality education and impact on quality classroom teaching .

3. Lack of Development Professional

Many teachers do not get training or development professional in a way periodically . This is hinder teachers from follow development latest in method teaching , technology , or development curriculum . Without development adequate professionalism , quality The teaching given is also trendy stagnant .

4. Excessive Workload

Teachers often faced with a burden overwork , good That in matter administration , assessment , and task addition others . High load This can reduce time and energy that should be can used For focus on learning and development student .

5. Limited Access to Technology

Although technology own potential For increase quality education , many teachers are having difficulties For access or utilise technology in the learning process . This can due to lack of training , limited facilities , or inability For utilise technology in a way effective .

Educational Efficiency

Efficiency education in Indonesia is still be one of challenge the main thing that needs to be done quick overcome. Although budget education has increase in a number of year Lastly , quality education produced No always comparable with the funds disbursed . Many schools are still face difficulty in compile effective curriculum , as well as optimize time and resources available power . The learning process is lacking efficient cause student often not capable reach potential maximum they, who in the end influence quality graduates and power competition they are in the world of work.

The amount amount dropout students school become indicator low efficiency in system education . Some factors that cause matter This among others the lack of access education , costs higher education , as well lack of support from environment around . Although various government programs aiming For lower number separated school , the reality Still Lots struggling students For continue education they are good Because factor economy and also problem personal . This is show that system education Not yet fully efficient in provide equal access for all student .

Efficiency education is also related with management source existing power . Many institutions education that is still experience waste in use of funds and facilities . For example , many schools that have facilities and infrastructure that are not utilized optimally , or teachers who have burden Work excessive and not focus on development innovative learning . Therefore that , for increase efficiency education , need existence repair in management budget , ongoing teacher training , and preparation more curriculum in accordance with needs of the world of work as well as development technology .

Misuse of AI in Education

Abuse intelligence artificial intelligence (AI) in education can happen when technology This used with the way that is not in accordance or excessive, so that disrupt the learning process and create injustice. One of form common abuse is use of AI for do evaluation automatic without

supervision human . AI systems that are not trained with accurate data or No customized with context local can produce biased assessment or No reflect ability student in a way objective . This is can harm students who have style Study or need special that is not understood by the AI system .

Excessive use of AI can reduce interaction man in the learning process . Education does not only regarding knowledge transfer , but also about development skills important social , emotional , and moral values in formation character students . If AI is used For replace interaction humans , for example with replace the teacher in a number of aspect learning , things This can reduce chance student For Study How collaborate , communicate , and solve problem in a way social . Use technology in education must still balanced with the role of teachers as facilitator who guides student .

AI in education can also cause problem privacy and data security . AI systems often collect and analyze personal data students , such as behavior learning , preferences , and outcomes test . If this data No managed with Be careful or fall to wrong hand , can cause risk violation privacy and abuse information. Therefore that's important for institution education For ensure that AI usage is regulated with strict and appropriate with regulation personal data protection, as well as prioritize transparency and security in student data management.

DISCUSSION OF RESEARCH RESULTS

The results of research related to educational infrastructure problems show that the inequality of facilities and infrastructure between urban and rural areas is still a major obstacle in achieving quality education. According to (Siwitomo et al., 2023) The concept of educational equity suggested by various educational theories emphasizes the importance of fair distribution of resources so that every student can enjoy adequate facilities. Previous research also revealed that schools in remote areas often lack basic facilities such as decent classrooms, laboratories, and internet access, which causes the quality of education provided to be less than optimal.

In terms of teaching staff issues, research results indicate that the lack of professional training and uneven distribution of teachers between urban and rural areas are the main factors in the low quality of education. According to (Reza & Syahrani, 2021) Still many schools inhabited by teachers who are technologically illiterate and reluctant to learn to follow the development and progress of current communication technology. Moreover, when viewed from the problems of education in Indonesia which has remote and isolated areas, making it increasingly difficult to develop teacher skills in using technology. The theory of teacher professional development emphasizes the importance of continuous training to improve pedagogical skills and expertise in the field of educational technology. Other studies also show that inadequate teacher welfare, especially in remote areas, affects their motivation and performance in teaching. This contributes to the lack of quality teaching that can optimize student potential.

Related to the problem of educational efficiency, the research results show that even though the education budget has increased, the education system is still not efficient in utilizing existing resources. According to (Suryana, 2020) The Government's commitment to implementing the 1945 Constitution and Law No. 20/2003 concerning the National Education System in the allocation of the education budget from the APBN/APBD, and the provision of basic education without charging fees gradually started to be realized. However, the budget has only reached 9.2% of the APBN spent by the central government. The budget also does not include budget allocated by the local government through the APBD. The theory of efficiency in education suggests that the management of budgets, facilities, and teaching staff be carried out in a more structured manner and focused on achieving optimal results. Other studies have shown

that misuse of budgets for ineffective programs, as well as waste in the use of educational facilities, are factors that hinder the improvement of the quality of education in Indonesia .

The misuse of AI in education is also becoming an increasingly relevant topic. Research shows that while AI has great potential to improve the quality of learning, the use of this technology without proper supervision can lead to biased assessments and reduce human interaction in the educational process. According to (Zakiyah et al., 2024) A number of student highlight impact Negative Artificial Intelligence in necessary education considered . One of the impact the negative is potential dependence students in Artificial Intelligence, who can reduce motivation they For look for information manually and think in a way independent. The theory of artificial intelligence in education emphasizes the need for balanced use of technology with the role of teachers in guiding and assisting students. Research on the misuse of AI also shows the risk of violations of student privacy and data security, which requires strict policies to protect personal data in the use of educational technology.

CONCLUSION

Based on the results of the research discussed, it can be concluded that the uneven educational infrastructure between urban and rural areas is still a major obstacle in improving the quality of education in Indonesia. The uneven distribution of educational facilities and infrastructure, such as classrooms, laboratories, and internet access, hinders students' learning potential, especially in remote areas. In addition, problems related to teaching staff, such as lack of professional training and uneven distribution of teachers, affect the quality of teaching. Although there have been several efforts to improve teacher welfare, there are still many challenges to be faced, especially in the use of technology that has not been fully mastered by most teaching staff.

The efficiency of education in Indonesia also needs to be improved, especially in terms of the utilization of the education budget and resources. Although the education budget has increased, less than optimal management has resulted in most funds not being used optimally. Finally, the misuse of AI technology in education has the potential to have negative impacts, such as dependence on machines and the reduction of human interaction which is important in the learning process. Therefore, it is important to ensure a balanced use of technology, while still considering aspects of student data privacy and security. To overcome these problems, concrete steps are needed in infrastructure management, teacher training, and the wise and controlled use of technology.

REFERENCES

Hasanah, A., Arifin, BS, Handayani, D., & Mumu. (2022). Information and Communication Technology-Based Character Education to Form the Character of the Indonesian Nation. *Journal of Socio-Human Sciences* , *6* (1), 707–724. https://doi.org/10.36805/bi.v8i1.6012

Isma, A., Isma, A., Isma, A., & Isma, A. (2023). Map of 21st Century Education Problems in Indonesia. *Journal of Applied Education* , *01* (3), 11–28.

Karnati, N., Suryadi, S., Burmansah, B., & Fatayan, A. (2020). Improving the effectiveness of employee performance: The value of a series of influencing factors. International Journal of Innovation, Creativity and Change, 12(8), 35-52.

Oktapiani, M., & Karnati, N. (2019, September). Evaluation of the implementation of basic literacy education program in Bogor Regency, Indonesia. In Journal of Physics: Conference Series (Vol. 1232, No. 1, p. 012032). IOP Publishing.

Reza, MR, & Syahrani. (2021). The Effect of Educational Technology Supervision on Teaching Staff Performance. *Educational Journal: General and Specific Research* , *1* (1), 84–92.

Rugaiyah, S., Kustandic, C., Rahmawatid, D., Sujantoe, B., Karnatif, N., & Hartati, S. (2019). Clinical supervision using information technology to improve teacher quality. International Journal of Innovation, Creativity and Change, 10(9), 328-347.

Santoso, TN, Marini, A., & Aulia, RN (2024). Human Resource Planning Strategy to Improve the Quality of Online Library Management Information Systems (E-Libraries) of Higher Education in the Industrial Era 5.0. *International Journal of Education, Social Studies, And Management (IJESSM)* , *4* (3), 1082–1090.

Siwitomo, DPA, Fitriyani, NN, Fadhilah, NN, & Mafiqoh. (2023). Educational Collaboration: Innovation Strategy to Overcome Educational Problems in Indonesia. *Proceedings of the Seminar … , 1* (1), 64–68. https://jurnal.fkip .unismuh.ac.id/index.php/prosidingunimbone/article/view/1456%0Ahttps://jurnal.fkip.uni smuh.ac.id/index.php/prosidingunimbone/article/download/1456/411

Suryana, S. (2020). Problems of Education Quality in the Perspective of Educational Development. *Education* , *14* (1). https://doi.org/10.15294/edukasi.v14i1.971

Zakiyah, NU, Ameera, V., Elsa Ritonga, A., Aisah, N., Awwaliyah Lingga, S., & Akmalia, R. (2024). The Use of AI in the World of Education. *Mahira* , *4* (1), 1–16. https://doi.org/10.55380/mahira.v4i1.557